



*"Rite in the Rain."*

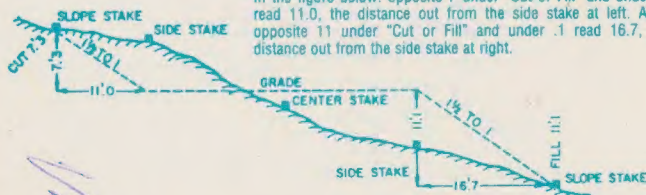
ALL-WEATHER  
FIELD BOOK

No. 350

# DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

## Roadway of any Width. Side Slopes 1½ to 1.

In the figure below: opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right.



| Cut or Fill | Distance out from Side or Shoulder Stake |      |      |      |      |      |      |      |      |      | Cut or Fill |
|-------------|------------------------------------------|------|------|------|------|------|------|------|------|------|-------------|
|             | 0                                        | .1   | .2   | .3   | .4   | .5   | .6   | .7   | .8   | .9   |             |
| 0           | 0.0                                      | 0.2  | 0.3  | 0.5  | 0.6  | 0.8  | 0.9  | 1.1  | 1.2  | 1.4  | 0           |
| 1           | 1.5                                      | 1.7  | 1.8  | 2.0  | 2.1  | 2.3  | 2.4  | 2.6  | 2.7  | 2.9  | 1           |
| 2           | 3.0                                      | 3.2  | 3.3  | 3.5  | 3.6  | 3.8  | 3.9  | 4.1  | 4.2  | 4.4  | 2           |
| 3           | 4.5                                      | 4.7  | 4.8  | 5.0  | 5.1  | 5.3  | 5.4  | 5.6  | 5.7  | 5.9  | 3           |
| 4           | 6.0                                      | 6.2  | 6.3  | 6.5  | 6.6  | 6.8  | 6.9  | 7.1  | 7.2  | 7.4  | 4           |
| 5           | 7.5                                      | 7.7  | 7.8  | 8.0  | 8.1  | 8.3  | 8.4  | 8.6  | 8.7  | 8.9  | 5           |
| 6           | 9.0                                      | 9.2  | 9.3  | 9.5  | 9.6  | 9.8  | 9.9  | 10.1 | 10.2 | 10.4 | 6           |
| 7           | 10.5                                     | 10.7 | 10.8 | 11.0 | 11.1 | 11.3 | 11.4 | 11.6 | 11.7 | 11.9 | 7           |
| 8           | 12.0                                     | 12.2 | 12.3 | 12.5 | 12.6 | 12.8 | 12.9 | 13.1 | 13.2 | 13.4 | 8           |
| 9           | 13.5                                     | 13.7 | 13.8 | 14.0 | 14.1 | 14.3 | 14.4 | 14.6 | 14.7 | 14.9 | 9           |
| 10          | 15.0                                     | 15.2 | 15.3 | 15.5 | 15.6 | 15.8 | 15.9 | 16.1 | 16.2 | 16.4 | 10          |
| 11          | 16.5                                     | 16.7 | 16.8 | 17.0 | 17.1 | 17.3 | 17.4 | 17.6 | 17.7 | 17.9 | 11          |
| 12          | 18.0                                     | 18.2 | 18.3 | 18.5 | 18.6 | 18.8 | 18.9 | 19.1 | 19.2 | 19.4 | 12          |
| 13          | 19.5                                     | 19.7 | 19.8 | 20.0 | 20.1 | 20.3 | 20.4 | 20.6 | 20.7 | 20.9 | 13          |
| 14          | 21.0                                     | 21.2 | 21.3 | 21.5 | 21.6 | 21.8 | 21.9 | 22.1 | 22.2 | 22.4 | 14          |
| 15          | 22.5                                     | 22.7 | 22.8 | 23.0 | 23.1 | 23.3 | 23.4 | 23.6 | 23.7 | 23.9 | 15          |
| 16          | 24.0                                     | 24.2 | 24.3 | 24.5 | 24.6 | 24.8 | 24.9 | 25.1 | 25.2 | 25.4 | 16          |
| 17          | 25.5                                     | 25.7 | 25.8 | 26.0 | 26.1 | 26.3 | 26.4 | 26.6 | 26.7 | 26.9 | 17          |
| 18          | 27.0                                     | 27.2 | 27.3 | 27.5 | 27.6 | 27.8 | 27.9 | 28.1 | 28.2 | 28.4 | 18          |
| 19          | 28.5                                     | 28.7 | 28.8 | 29.0 | 29.1 | 29.3 | 29.4 | 29.6 | 29.7 | 29.9 | 19          |
| 20          | 30.0                                     | 30.2 | 30.3 | 30.5 | 30.6 | 30.8 | 30.9 | 31.1 | 31.2 | 31.4 | 20          |
| 21          | 31.5                                     | 31.7 | 31.8 | 32.0 | 32.1 | 32.3 | 32.4 | 32.6 | 32.7 | 32.9 | 21          |
| 22          | 33.0                                     | 33.2 | 33.3 | 33.5 | 33.6 | 33.8 | 33.9 | 34.1 | 34.2 | 34.4 | 22          |
| 23          | 34.5                                     | 34.7 | 34.8 | 35.0 | 35.1 | 35.3 | 35.4 | 35.6 | 35.7 | 35.9 | 23          |
| 24          | 36.0                                     | 36.2 | 36.3 | 36.5 | 36.6 | 36.8 | 36.9 | 37.1 | 37.2 | 37.4 | 24          |
| 25          | 37.5                                     | 37.7 | 37.8 | 38.0 | 38.1 | 38.3 | 38.4 | 38.6 | 38.7 | 38.9 | 25          |
| 26          | 39.0                                     | 39.2 | 39.3 | 39.5 | 39.6 | 39.8 | 39.9 | 40.1 | 40.2 | 40.4 | 26          |
| 27          | 40.5                                     | 40.7 | 40.8 | 41.0 | 41.1 | 41.3 | 41.4 | 41.6 | 41.7 | 41.9 | 27          |
| 28          | 42.0                                     | 42.2 | 42.3 | 42.5 | 42.6 | 42.8 | 42.9 | 43.1 | 43.2 | 43.4 | 28          |
| 29          | 43.5                                     | 43.7 | 43.8 | 44.0 | 44.1 | 44.3 | 44.4 | 44.6 | 44.7 | 44.9 | 29          |
| 30          | 45.0                                     | 45.2 | 45.3 | 45.5 | 45.6 | 45.8 | 45.9 | 46.1 | 46.2 | 46.4 | 30          |
| 31          | 46.5                                     | 46.7 | 46.8 | 47.0 | 47.1 | 47.3 | 47.4 | 47.6 | 47.7 | 47.9 | 31          |
| 32          | 48.0                                     | 48.2 | 48.3 | 48.5 | 48.6 | 48.8 | 48.9 | 49.1 | 49.2 | 49.4 | 32          |
| 33          | 49.5                                     | 49.7 | 49.8 | 50.0 | 50.1 | 50.3 | 50.4 | 50.6 | 50.7 | 50.9 | 33          |
| 34          | 51.0                                     | 51.2 | 51.3 | 51.5 | 51.6 | 51.8 | 51.9 | 52.1 | 52.2 | 52.4 | 34          |
| 35          | 52.5                                     | 52.7 | 52.8 | 53.0 | 53.1 | 53.3 | 53.4 | 53.6 | 53.7 | 53.9 | 35          |
| 36          | 54.0                                     | 54.2 | 54.3 | 54.5 | 54.6 | 54.8 | 54.9 | 55.1 | 55.2 | 55.4 | 36          |
| 37          | 55.5                                     | 55.7 | 55.8 | 56.0 | 56.1 | 56.3 | 56.4 | 56.6 | 56.7 | 56.9 | 37          |
| 38          | 57.0                                     | 57.2 | 57.3 | 57.5 | 57.6 | 57.8 | 57.9 | 58.1 | 58.2 | 58.4 | 38          |
| 39          | 58.5                                     | 58.7 | 58.8 | 59.0 | 59.1 | 59.3 | 59.4 | 59.6 | 59.7 | 59.9 | 39          |
| 40          | 60.0                                     | 60.2 | 60.3 | 60.5 | 60.6 | 60.8 | 60.9 | 61.1 | 61.2 | 61.4 | 40          |

*"Rite in the Rain"*

ALL-WEATHER WRITING PAPER ©



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Project

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## CONTENTS

[illegible]

L 198

Jalai Terpan

Bansa / Puting bileng - Tiliaceae?  
"Grevia"

360' edge of kamir. Fruit orange,  
6 flutes. Lvs dark green above, light green  
below w/ brown vms. Lvs many ants - nest built  
under lvs. No var. Organic soil. Young tree,  
10 m. Black bark.

199

Uban Lengkan - Myrt. 2-5 m  
sapling. 420' alt. Bark grey. Fts green  
but not yet ripe. Bark green above  
and below. Location in 198.

200

Rumex

Selukai lada. Fruit yellow, but  
will become white. Sapling, 3 m.  
420' alt. Lvs dark green above,  
light below. Bark white.

201

Selukai mai. 4 m Sapling. Bark white.  
Lvs dark green above, light below. In fruit  
reddish color.

202/

no cheng

Euphorbia

Jenggam - Tekayang? ~~banawa~~

Mithy man nthur? 3 stems, dioecious  
Lvs green above, light green below,  
lanceolate? Bark grey. No men.

203/ Mernyamuk. <sup>Tree</sup> Sapling, 4m. Does.

MA yau yau big. Leaves dark green  
above, lighter below w/ brown vms. Fruits  
black, ellipsoid w/ one seed. Boleh mika,  
tapi helat, 480', ridge slope, clay  
soil.

204/ Myrsinaceae - Myrsine

Mergamah padang - 3 Salt here  
4m tree Dark green above, light  
below. Fruits slightly star shaped. Fruits green,  
one seed, opaque white, located as  
inferior

205

Kayduhjen panan - Lim panan  
Goniothale lemnis  
tree.

Lvs. dark green above, light below  
3 m sapling. 500'. Location as before  
Ca 3 Co 6 A.S. Flare buds green,  
stamens yellow.

+tiangnanji

206

~~+tiangnanji~~  
Sennhan - Kawi - Polyalthia  
5 m sapling. Lvs. dark green above,  
light below. 4 seeds, yellow, fruit  
green, will become yellow. No bark  
for strips.

207

~~Serbok~~ Serbok - Meliaceae. Again  
4 m sapling. 320' alt. Ridge top  
Dark green above, light below with  
rich brown in dimerium. Inflor. brown too.  
Bark red

208/

Buah mata rangis  
Rubiaceae. Sapling 4 m. Location as  
before 500' alt. Leaves green above,  
much lighter below. Fruit white, young  
will become brown. No uses.

209/ Resah tasah

3 m sapling. F & gray on seed  
Leaves dark abv, light below. 1/2 seen.  
Bark whitish - 560' alt. Ridge  
No uses

210/ Lvs spp.

Dark sabsar, infls. yellow  
3 m sapling. 620' alt. Same veg. type

211/ Tree, 5 m. Bark white. Fam

Scab off trail on ridge top  
Lvs dark green above, light below  
Tempan. Figs orange, fruit white  
silky. 780' alt. No uses.

212/ ~~FLA~~ ATAPU

Sabor bubuk - Rubiaceae

880' ft alt. Sapling, 4m.

~~F~~ Fts orange. Birds eat.

2131 Kenedis / Kira

Clusiaceae. 30m tree. Bark red, oak  
like" fissuring. 680' alt in dip between  
ridges, organic soil. Lvs lighter above  
and below. Fts & lvs eaten. Lvs  
from sambal

214

Myristicaceae - Kunyung Arah  
680' alt on slope to ridge top.  
3m sapling. Lvs dark gm above, light  
green below. Fts & branches all brown  
in December. ~~Fts~~

Sgaji: Redan

Jelai: Bukit Summit

215/

Semukan tialang; 800' alt.  
ridge top, organic soil. Bark above, light  
below. Pith largest for straps.  
base

Fruits green, spec. yellow when ripe.  
Inflores. centiflorous on stems. 780' alt.

216/

800' alt. Location as before

Kayu SOLA. Leaves dark green above,  
light green below. Bark brown  
Fls red, parts of b, 9 1

217/

640' alt. In plot a Bukit Lambir  
trail. MAREYASING - Ochnaceae?  
Red fruits, yrd? Lvs Chastaceae  
brilliant green. Bark light brown. Shrub.

20/9/91

Bukit Lamb Trail

218/ *Macaranga tiloba* 360' alt

Maue 'Bumyande'. Fruits deep  
Ochre. ~~cooked and eaten by birds~~  
Filled w/ ants

3 m shrub, sky of 10/20' fruit.  
Leaves green above, lighter below w/ red  
young lvs.

219/ 380' alt on organic soil, slope  
Mrt Eng. - Ubah Langka

2.5 m shrub, will not get much  
taller. Bark white. Lvs dark green  
above, lighter below. Fruit white, ripe.  
Seed white, very juicy. Tissue mottled  
red and brown, adhering to seed and not  
pericarp. No uses

220/ 360' alt, Location as before  
Semnamburun. Tree, 25 m. Bark white  
Bk straight, no buttresses. 40 cm dbh.  
Leaves green above, only slightly lighter  
below w/ yellowish ins. Fruit size of large  
egg. Outside covered in green pubescence,  
like a "ma". Seeds yellow.

Bark used for sap, wood good for  
construction and firewood.

221/ Entropak 3m shrub, 420' alt,  
location same. Bark brown, lvs green  
above, light green below w/ large green  
petioles. Fruits grey green, 2 lobed seeds  
purple above and white below. Nomes.

Euphorbiaceae - Croton.

Fruit w/ 2 erect styles on top.

222/ Bunge ram - Xara - Rutaceae  
Nomes. 2.5m shrub. Location as before  
480'. Bark brown, lvs dark green above  
light below. Fls and fruit salmon  
colored.

233/ Uecap / Rosaceae

Empedo - Wood from Paya not  
bark. 12m tree. Bark white. Lvs light  
green above, lighter below, inflo. terminal  
racemes. Lvs alt, entire margins  
serrate. Kneed by larvae. Fruits a green  
blue color, with few light green speckles.  
One seed. 9. 560'. Organic soil on ridge,  
top by edge of landslip dominated by  
pioneer species. Fruits eaten by people.  
v. astringent

234/ Rutaceae - vine, No uses. Leaves  
light gm above, much lighter below.  
Seen in flower red, leaves mostly  
same as before.

235/ Dau sebany

4 m tree, habit 10 m. Lvs sp.  
Fruit yellow, discolored - b. One seed,  
brown testa vertically striate, placenta  
basal. 540' on organ, soil is piny.  
Forest. Leaves dark green above, lighter  
below. Bark ruddy brown. Frt & seed eaten,  
tree mostly flower.

236/ 2 m 640' in plot.

Ayam/sebayan - Cinnarus - Cannaceae  
Lvs light green above, light below. Capsule  
velvet and dorridescant red above. 2 black and  
smooth seeds hanging from each of the  
four locules. Bark brown, tears off in strips.  
No uses. 4 m tree, 4 locules to capsule.

237/

By 236. Something weird  
on a finger!

238/ Pulo ~~ambukel~~

Malastomataceae - Tree, 30m, 160' alt  
Bark white Ca Cdt A 8 9. Fruit 4mm diam,  
brown-green, numerous seed.

Ulin, prang, makan buah. Leaves green above,  
lighter below. On the bottom of a ridge,  
organic soil.

239/ Entek - Oleaceae ?

1 5m sapling. Leaves dark green above,  
light below. Fruit ripening red of white  
flk ~~2~~ 2 brown seeds per fruit.  
Infert. cany form on stem 640' alt. Thorns  
on below. Fruit (spring - long) for animal.  
Fruit edible

240/ Merjumah, Ardisia, Myrsinaceae

5m sapling. Bark white. Lvs green  
green above, lighter below. Fls <sup>1st of all</sup> pink  
with brown glands. 600' ridge top  
end of ~~path~~ organic soil. Can get 1000  
No uses.

241/

Merkebung - Macaranga gigantea  
Tree, 15 m. Bark white. Lvs green  
above, light below. ♀ tree. Fruit 2 lobes,  
one seed per lobe. 560' alt on ridge top.  
Good for home building. 25 cm dbh.

242/

Merrymannia

Sapling, 5 m. Bark brown. Leaves lime  
green above, light below. Fruit black,  
ellipsoid/subglobose, one seed.  
Fruit can be eaten, but astringent. 400'  
alt. on organic soil.

243/

merjinch

2 m sapling. Bark white. Lvs dark green  
above, lightish below w/ brownish vms.  
480' on organic soil on slope. Fruit green  
w/ brown dots, one seed, opaque white  
per fruit. (c 5, persistent fruit.  
No more,

223/

Matulang - Euphorb. Shrub 3m.  
Bark white, smooth, Lvs dark above,  
slightly lighter below. Fruit 3 lobed  
400'; location as before. Good for  
fire-wood.

224/

Tara manam - Apocynaceae.  
Tabernaemontana macrocarpa Jack.  
Tree, 15m. Bark white. Lvs green above  
light green below. Flowers and buds  
yellow. Ffrs. mango size, orange lined,  
white flesh, red seed. 440' alt.  
Sandy slope, organic soil. No uses, toxic

225/ Uchang buirang - Burseraceae

380', very steep slope.

Tree 10m. Bark red. Fresh red, 3 angled,  
caniferous fascicles, one seed, black,  
"squishy". Basal placenta taken. Infls  
caniferous all way up stem. Slight <sup>sap</sup> exudate  
from fruit. Fruit red outside, orange within,  
white around seed.

226/

Porang area

Maccanga triloba - ~~M...~~

Shrub, 6 m. tree. 320' alt. Bark brown  
 inside: 20' forest. Bark white. Leaves  
 green above, light green below.  
 Stems hollow, with little bit. Stipules  
 fleshy.

Jawa Selatan: Jawa

21/1/71

227/ Sempul putih

Shrub, 1 m. Nakuning big. Bark brown.  
 Lvs green above, light below. Fruit  
 orange. 300', clay soil, organic soil  
 On steep, porous forest. Flowers

228/ 340' forest as before

Kedumak hill. Bark brown. Lvs dark  
 green above, light below. Flowers white.  
 Bark white/brown. Good for fire wood,  
 fire wood. Becomes much bigger.

Berangan bu/pir capili/koh 17

229/ Berangan kukot, Tree, 20m.

Both sides of horizontal stripes.

Good for firewood, eating. Timber not good, but Chinese sell it claiming it is. 420' alt.

ridge top - organic soil. Leaves dark green above, slightly lighter below. Outside green, inside brown.

230/

Kumpang darah - r. canny species

420' location as before. Leaves

dark green above, light below.

White or white and white. Good

firewood.

231/

Gemuka; ~~hitam~~ hitam. Bagus untuk

papan (plank) untuk lantai. Sata

triji saja. Kulit hitam. Buah merah

kaluar, putih di dalam. Biji coklat.

Dam dark green above, lighter below.

5m 2.5m shrub 5m tall on

soil, flat area on top of ridge.

young fruit.

uchang

232/ Jinggan - *Euphorbia*  
 Ca 5 Style 3. Fl 3 mm long 33  
 Fruit bright red, splitting into 3 to reveal  
 3 black seeds. Leaves leathery dark green  
 above, light below. Does + flowers with  
 more than 6 m. Hairs. 500, one leaf  
 one before Bark black

244/  
 Jinggan Liban

Specimen same as before, 1.5 m sapling.  
 v. similar to one before, but diff. species.  
 Locality same 521

245/ Kumpang darah - *Myristicaceae*

600', ridge top. Sapling, 4 m. Bark thick  
 Leaves green above, thick below w/ brown  
 veins. Fruit brown. Kayu api saja.

246/ Enserai - *Melastom.* *Euphorb.*

600', location as before. Fls red

Ca 5, Co 5, red A 3, 5 mm diam  
 green red. (Msherrin, red)

— Lvs green above, light below  
 Bark white.

246/ Kayu sala. Location as before  
Bark white. Fruit red. Specimens  
not good.

247/  
Mejuntah - Myrsinaceae - *Ardisia*  
Sapling, 6 m. Leaves green and shiny  
above, lighter below. Fruit not yet set,  
green, if brown with red stripes.  
900' ridge top.

248/  $\begin{matrix} \text{sep} \\ \text{Co } 5 \\ \text{green} \end{matrix}$   $\begin{matrix} \text{sep} \\ \text{Co } 5 \\ \text{yellow} \end{matrix}$   $\begin{matrix} \text{A } 5 \\ \text{yellow} \end{matrix}$   $\begin{matrix} \text{95} \\ \text{red} \end{matrix}$  style 1

Leaves alt, <sup>alt</sup> granule, light green  
Mergasing, Ochmanadine. Shiny?  
2 m shrub, 1780' a ridge top. Bark  
red-brown

249/ Sabar bambu

~~Myrsinaceae~~ Malvaceae

Leaves light green above, lighter  
below. Fruit red, 5-locular.  
900' ridge top, path.  
Sapling. 900' a ridge top path.  
Bark green (young).

250/

Same location. Selukai Lada

6 m suply. Fls red, lvs red

Ca 3  $CO_2$   $CO_2$  A.s. yellow  
1st cal large, 2nd small  
alt Ca 780' alt

Petals not closed. Bark white  
580' alt. soil. Lvs dark green above,  
light below.  
Fruit red.

Ranunculaceae - Cycloclouya?

251/ Bunga mata ranyu Rutaceae  
520', Same path before

Lvs green, dark above, light below

Ca 550'. Orange red, on lower  
Red orange. On seed, <sup>2nd</sup> Purple Macaranga  
paukt

252/

Puet - Tampa - Baccara 2nd

Tree, 15m, 80 m alt, Bark red 6 ft  
pink brown, suply white Bark as usual

~~500'~~ Lvs dark brown above light below  
alt red from 15m, 760' alt, flat area  
of marshy forest. Gran? 2nd 500' alt:  
of marshy forest 15m alt, 8m

Fruits cauliflous on branches and stem.

TANJUNG BERSAI

253/ ♂♂. Peat swamp remnant, 2911  
meters. ~~The Marang~~ *Marang*

Enkrumia 6m tree. Bark brown.

Lvs dark green above, white below.  
Frs agglutinate & localized, some 3 light  
green color. Knobby like on fruit. Bays  
dumbel knot small.

254/ Bursi bangin

Location as before. Tree 20m. Bark  
white. Lvs green above, slightly lighter  
below w/ red veins. Major veins 10  
set. GS yellow green, 10 set. All sepals,  
fused. As. all 1 petal.  
S.S. Fruit green, yellow. 5 lobes.  
dumbel knot of yellow. Frs 3 petal.  
Major thousand

255/ Marang. Bark white, tree 10m.  
Lvs ~~green~~ ~~dark~~ green above,  
light below, GS, 10 set fused, above  
very superior. Major good for wood. Very

256/ Kelampayan, Malesia

Sundarum, long, thin

Lvs. cord. irregular green above  
lighter below. Red bark. Thig bark  
green. red berhulu. thick

257/ Medang Paga

Tree 10m. Lanceolate? Bark thick. Lvs.  
green above, lighter and more shiny  
below, light green. 5m diameter.  
Bark reddish. thick

258/

Entagaran, Leaves glau green above,  
lighter below. 9, for large peristyle  
sepals. Tree 10m, bark thick.  
2 locules, are large and seed and  
Thick yellow bark and fruit green. thick

259/

Butanum.  
3m sapling. Bark red, oil  
glau. Lvs. alt, fruit thick than the  
Encasand, good fruit

~~260~~ 260/ Oxalidaceae - Sarcobacca

Tree 10m. Salt marsh. B. d.

leaves. Pinnate 5 locules. Capsules persistent.  
Lvs green above, almost white below.  
Pubescent. Very papuleous. 2-4 seeds per  
locule.

Ca 5 Co 5 Stylos A10  
alt.

27/9

261/ Ubah jambu - Myrtaceae  
5m sapling. Bark white. Leaves dark  
green above, r. light green below.

Fruits red, bilobate 1 cm long, 6 mm wide.  
Subglobose, depressed in middle. Seeds  
obovate. Wood can be used for house  
building.

262/ 120' for Str. bed.

Rough bark - Rubiaceae - Good  
for firewood. 4m sapling by Sagar.  
Leaves dark green above, light  
below. 6-8 cm long. One seed w/  
purple flesh.

263/ Pati saman maram Bont flower  
like legume legume Gonocarpus  
6-8 cm long, dark brown. Leaves leg  
dark green above, light below.

Ca 5 Co 5 A<sub>10</sub> Styl 1 ~  
2 up not large 3+2 6 mm deep  
Fruit round, thin rpe, red, one seed  
Good for wood.

264/  
Gunga Marni acorn Antirrhoeaceae  
Leaves dark above, light below. Flower  
white. 120' alt on granite soil.  
2 m shrub, bark thick. C

265/  
Tinggau - Euphorbiaceae  
Shrub, 2 m, bark thick 15. 6 m B. bark white  
Leaves dark green above, light below.  
Inflo. yellow. Fruit red. One seed. No  
wax. Majorly sandy and organic soil by  
\* Sungai Rejo.

266 Rubiaceae

Sabar bulak, Sapling, 2m (can get to 15m).

Bark brown. Leaves light green above,  
lighter below. Fruit very good for  
baking. Barkin partly used as paper.  
100-200 m in the surrounding watershed

267 Madang banyu. Lauraceae

Shrub 3m, bark grey to 4. Leaves green  
above, waxy white green below. Fruits green,  
one opaque white seed. Bark black.  
Good for house bldg.

268

Entyge 4 m tree leaves green above,  
light below. Bark light brown.  
Fruit 2 seeds, <sup>seed very small</sup> each. No uses.  
Slight sandak. Of Shuk sap. 2° forest by  
trail. 60'

26/9

<sup>80'</sup>  
269/ ~~340~~. Oil plantain margin  
Entire. Molloni  
3m shrub. 2 ft. Red tube  
Lvs green above, light below

270/ ~~Acacia~~ Acacia. 6m tree. Bark  
brown. Leaves light green, light below  
Inflo white. Locustia on leaves

271/ Marginal - Breche - Scroph  
Scroph. 2m. Bark green (young)  
Bark white, Trunk yellow. 20 seeds  
exposed

272/ Mergang

Leaves green above, light below  
Simple. Red. Bark red. Inf white

273/ Sclerolobium (young)  
Lvs light above, lighter below. Inf green  
2 yellow. No more 500' alt. Org. Scl.  
Bark white.

274/ Serunkan daun besar

160' alt organic soil by stream.  
3m sapling. Fruit green, shiny flesh.  
Leaves green above, lighter below.  
Good for home - bldg.

275/ Serunkan kecil. 3m sapling  
organic soil by river bed. Lvs. green  
above, light below. In fruit of reddish  
flesh. 340' alt.

Used for home bldg.

276/ ~~Berserisea~~

Tinge paku dok  
Lempay Brambut. River bed  
5.00' covered only, 200' alt.

277/ Betang - Cipitap. - Nandau. 1st  
3m sapling in river bed. Used for passing  
hand - put in. Fls. white. Lvs. light green  
above, lighter below.

283/ Sabar Dam / Belau - V. ...  
Cell: 140' Sandy soil 20' forest  
Lvs green above, lighter below. Ears black  
New birds. 5m tree, willow.  
Bark white

Bilan

284/ Edge of al palm plantation  
20' forest 5m tree. Bark white  
Lvs green above, light below. Calyx

|              |        |           |         |
|--------------|--------|-----------|---------|
| Cell 4       | Cell 4 | At        | Style 9 |
| like 1 style | purple | at 100    |         |
| brings       |        | on petals |         |

285/ Tempon - Flies

4m tree. Bark red. Red dark  
green above, light below. Ears red.  
Young. Full of red fruit. Ears  
white. Bark. 16 days.

Along and assoc. scrub dominated  
habitat.

286/

180' alt. in oil plantation  
in S. low app, serrate. Tree 6m.  
dark red. Cal 4, lobes 4, above,  
light below. Kary. 2n

287/ Fraga. Loganiaceae. Borneo  
Infr. Sep. 19

288/ Location as before. Tree, 5m  
dark white-red. Lvs green above,  
light below. Infl. numerous, branched.  
Fls. ~~pinkish~~ SCARLET

289/ Gata?

Tree, 10m. Bark white. Lvs green  
above, light below. Inf. branched, with  
green-orange, 7 lobes, one seed per  
chamber. 20 fruit by R. S. S. S. S.

290/ Shrub, 2m. Bark brown, green  
lvs large <sup>app. 10cm</sup> Cal 4 to 5. Petals 4, light  
red. Fruit undersides blue, 4 lobes, one  
seed per lobe. Stems epiphyll.

Bunga panggal. Branch at cat, fruit  
at cat.

291/ ~~no~~ or ft. 300

Macaranga tilaha. 9 trees, 100 ft. tall. By  
Sungai. Leaves green above, light below w/  
red <sup>below</sup> ~~from~~ <sup>from</sup> ~~ms~~

64 ft. min. Bark white 126.

Parang amak

292/

Eukalyptus - fruits, ~~fruits~~ black.

tree, 6m. Bark black. Lvs light green above,  
lighter below. ~~fruits~~ yellow - green w/  
light yellow speckles. Fruit green, and  
yellow

293/ Bursi - Yoruba - Tiliaceae

20 ft. tall. Lvs green above,  
light below. Fruit orange, 3 lobes.  
pericarp placental, and white seeds.  
Bark brown. Fruit orange

294/ Bursi - hair green. Same locality,  
for yellow

En farah

295/

Mellotus

MERAH BATAHAN

Banjar ~~Entusa~~

Entusa

296/

Same as 295, diff. tree

3m sarpy, 1 ♀. Fls green. Bark brown  
Lvs lighter green above, sarpy brown below.  
20' alt.

30/9/91

Kpg Selangan

278/ 0' alt. 20' fruit by barner

Kelampayan - Sarcocornu Melanocarpus  
Tree, 3m. Bark brown. Lvs shiny  
green above, lighter below. In fls th. fr.  
Bud paper smooth

279/

Langi siam

Leb. h. - makes soap, good for skin & hair  
Indonesian staple

Ca 5, Co 5, A10 Spk 1 S, 2 or 3 Unk

Termin <sup>alt</sup> pumilus 1st sp. in spirit

Tree, 5m bark shd. Lvs green shiny,  
green abn, light blue

280 / Tree, 15m Bark red brown

Tingg. Kinga / Empaling

Malay

11b.

Norisia major / Logania

Lvs green above, light below, of prominent  
ms. Infl. green white Good for skin  
paray - skin

281 / Paca Kating - Medicine

Slippery tree, 5m for roots. Red for cosmetic  
Lvs green above, light below

fl. green w/ red hair. B. corolla.

Macaranga sp. 5m, 1' patch.

252/ Muli<sup>2</sup> (m)

Kemali Leea - Rupleindacene  
(1h)

4 m tree by stream. Bark green brown  
lustrous, papery. Fruit purple and  
juicy. Skin ripe, w/ 4 brown seeds  
thin dense white coat inside (hairs), cancer  
abscesses. Put leaf. There is a crust  
over bark area (or as wound), 1-2 days.  
Still roots, 3 stems

297/ Pialut

Sapling 2 m Bark brown. Cal 4, Cor 4. All are  
per petal 94 (from style). Leaves all  
epid, leaflet long, serrate. Fruit is red  
and purple, 80' or, secondary forest

1 as few, a few figs, spleen. Fruit  
to Tampang paraka

298/

cc 5 (05) As 9 3 3 styles

Lvs. <sup>opp</sup> alternate, exstip. Fls. white  
~~corolla~~ <sup>stamens</sup> yellow. Calyx & styles  
 perianth light. Fruit 3 loculate & seed  
 centrally placed. Fl. at base.  
 3m sapling, bark brown, lvs. green  
 above, light below, by dense foliage  
 40' alt.

Burje ochred bark

299/

Nasi-Nasi, low cat forest  
~~2m~~ 2m shrub. Bark brown  
 covered in lenticles, many light  
 in dense wood. Lvs. light green  
 above, white below, God light  
 45'. Many occ of 20 feet.

Macan banyu ocher

300/ Timbong timbong batu. Rubiaceae?  
2m shrub Lvs dark green above, light  
below fruit white w/ one seed. Leaves  
app. separate. 2 loculet. ? No name.

301/ Marceae. Ficus, 20m

~~fruit~~ Fig - extremely  
Pangkumat - juice makes you have  
many children. Bark white and brown.  
60 cft. 20 foot ~~Nodes~~ taken.

302/

As 301, but of ~~lar~~, different tree  
different ficus / Santalaceae.  
Nang (II)

303/ Bayam Intan (M) - SPAN (15)

Euphorbia Tree, 8m Bark white  
Leaves green above, light green  
below. Fruit white, 3 loculet  
one opaque white seed in each  
Cut ~~low~~ young lvs as vegetable

304/ Kumpang daroh. 260' a top of hill  
In scrubby 2nd forest. Tree, 5m.

Lvs green above, light green below. Bird only observed  
@ top, white flowers. Seed taste  
brown Endogen brown. Pinewood only

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Dilleniaceae 1/1/91

305/ Beringin 300' near Tanan Nagar  
Hill, again. Bird. Tree, 10m. Bark red  
Lvs green above, light to below. Buds yellow.  
Used for home medicine. Dilleniaceae

S. J. J.

4<sup>th</sup> August 1992 - Kebun Raya Trip - 3 day  
Gede Program. National Park 15 people  
Base Padi, ~~2080~~ ft.

5 VIII 92 31080

A4 - ~~3000'~~ Legume. Fls yellow. Lvs grey &  
end - cecary. *Crotalaria* sp.  
Gr. green - before pods - then plant green  
End back by lake.

A5 - ~~3000'~~ Grass 1 m. in mud on  
slope of hill, 20 sp.

A6 - Umbellaceae? 4400' 4 m tree / cluster  
end back. fls pink

A7 - *Andisia* <sup>*polygamosa*</sup> 3 m shrub cluster  
fls pink purple. Lvs as before.

A8 - <sup>*anisoptera*</sup> Begonia same place. Fls red / white

A9 - *Acanthaceae* - <sup>e</sup>*Strobilanthus* *Cernua*  
2 m shrub - fls white. Lvs as  
as before. Said to be once very

3 sp

A10 *Commelina* ~~sp.~~ *marguerita*  
On rotting log bridge, 4000'  
over stream. Ray area. Fls. blue  
Cane Yeha

A11 *Impatiens* Along margin canal.  
Elevation 2000'

A12 *Solanaceae* 3- shrub. Fls. white  
w/ yellow stamens

A13 *Acanthaceae* - 1.5m shrub. Fls. white  
Stamens cream yellow. Lvs. green  
w/ yellow midrib. Yang Shueh gon  
w/ light red. 3200' on cleared  
land returning to forest

A14 *Drygala* - fls. pink. Best smell  
strongly phenolic. "oodt gook" By  
trail on ridge - recovering forest  
3200'

A15 *Heliconia* - *lutea*. Tree 5m  
Best black w/ white. Lvs. green  
Fruit green w/ yellow. Fls. pink  
and to side of stem. In wetland



A21/\*ALC Chadon clear with  
like this is juvenile covered with  
dry barren, Parasitic on barren  
3620'

A22/Hernandia? Poaceae

2920' Path on slope expanding area

A23 2720' dry trail clay roadside  
herbage, Oxalis

6 viii 92 built 92

A24 - 3720' on ridge dominated by  
L. hirsuta / Crotalaria / Agave / Podocarpus / Barbieria  
L. hirsuta - Centrosema 3m tree  
Fl. white, base light brown

A25 - Disporum Swartz Disporum  
3820' - as before 0.5' herb with black  
perianth, 3-lobed seeds cream white,  
faintly dark lined vertically.

A26 - Schubertinia - Acanthaceae - as before  
3860' Path Shrub / pink - red @ base  
center

A27 - 3780'. Plants are fallen trees  
(A28) 400' tall green above brown below. Fls. pink  
top yellow (A29)

A28 - Smilax - loc as above

A29 - Apocynaceae - Fls purple red  
petals and column purple & yellow  
3520' Climbing on fallen tree all  
Gleditsia fern

A30 White flowered herb low dark green  
above, light green below. 3260' or lower  
covered path

A31 Grass - same as A30

A32 Sedge - as A30

A33 Impatiens - as ~~A30~~ A30

fallen  
trees  
all  
path

A34 - Gesneriaceae *Priscettum longifolium*  
Fls red on the purple. Lvs dark green  
above light below.  
3200' by clear flowing stream, blunders

A35 - Gesneriaceae  
3260'. On tree by path. Humus soil. Lvs dark  
green above, light green below. Flowers red

A36 \*ALC\*  
Orchid. 3260'. Colorless Humus  
Pleurococcium (shrub). No banks

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BB/BR

3 x 92

A37-540'. Mangrove beside  
 Belawan Ella - km 23 on SBK rd,  
 east side of river and Part soil. Tree 4m.  
 Bark light gray, fissured - scurrying  
 Flaws & blood red purple. 5, single  
 A.D. in 3 bundles. Calyx 5. Free petals  
 5, free leaves leathery, light green below,  
 dull medium green above. Locust say it  
 get to 5 in diam. grow in scrub and  
 primary forest. *Hydnocarpus* - *Crotonylum*  
 "Taman Ampak" - good for firewood

A-38 Tree 2937 960'. "Bintanjer" 15m  
 25cm. Yellow (kuning langsat) bark. Bark  
 fluted to 1m. White sap coming in spots. Inner  
 wood white. Bark papery scaly.

A-39 Tree 3122 25m. Jolukung 25cm dbh  
 Straight but slightly fluted to buttress  
 toward base. Bark light red. Brown black spots  
 blood red sap. Inner wood white. Bark  
 narrowly and slightly fissured.  
 Looks like *Palaquium*. But dark above light  
 below.

Tree 2941

A-39 *Diospyros* 15m 25cm dbh straight  
bole, slightly buttressed at base.  
Bark very black, slash dark red, brown.  
Fruit yellow, 7 loculate, 4 persistent  
lobes. Eaten by monkeys. Occasionally eaten  
1 to 1cm from the stem. Labeled Kanyang  
Lvs dark above, light below w/ yellow midrib.

A-40 ~~Shrub~~ Tree 6m 7cm dbh  
Bark light grey, slightly papery, flaky  
Slash white. Fruits rose red and white.  
Remains of two styles in fruit. ~~Seeded~~  
Flesh white and slightly *Testa purple*  
Light-yellow purple. Gelatinous endocarp.  
Lvs dark green above, light below.

A41 - *Gnaphalium* - young - *Diospyros* like  
(A42) In flowers yellow, becoming  
red.

A42 - *Diospyros* 6m dbh 12cm dbh  
Bark brown-orange, smooth, lvs  
patched. Lvs much lighter green below.  
Fruits indurated scarlet.

Splitting into 3. Rpt orange yellow  
Testa red. Endocarp cream yellow.  
Lvs w/ sup

Myristicaceae

A-43 - 967-3805. Tree 15m tall 35 cm dbh slightly flate. Bark gray-black, hooped, richer patches of, narrowly fissured. Slash red, red say, inner bark wood white. Leaves dark green above, light green below with yellow midrib. Pr. distinct hairs. 860% Slope. Red clay soil. Primary forest.

A44. Myristicaceae - Shrub - 4m, light bark. Lvs light green above, glaucous below. Fruit w/ yellow-brown hair. Fruit orange-yellow. Taste white. X5 seed white with brown lines. Location as before.

A45 - <sup>Kensyran</sup> Keruing Lam Kieul - ~~Large~~ <sup>Large</sup> ~~Playak~~ <sup>Playak</sup> recognized by fold (slur) between 2<sup>nd</sup> and 3<sup>rd</sup>. Tree 25 cm tall 60 cm dbh. Bark red and black. Large flowers, large orange larkspur. Branches to 2m, firm w/ slash white inner bark yellow, inner wood white. Tree no. 2165

A46 1140 ft a slope. Diospyros. Same  
sp. as 39. 755 fruit to an even green  
In side orange, red sup. 7 seeded  
Flesh white 16 m to 1; Bark black  
inner bark red, wood white

A47. Meday - 2332. 40 m tall  
Diam 70 cm. Bark white, closely  
hugged. Slash white yellow. No  
sap. ~~Not very granular~~ - ~~hills~~  
~~and~~ ~~very~~ Bark 3 cm, folds and  
falls apart. Inner wood yellow and hard

A48 (67) - Mahabau - Meyyadin  
35 m tall 55 cm dbh. Bark  
black, smooth, brown patches  
Lustrous branched. Slash white  
no exudate 1160

A49 (6) Neirih - Pakhi makhatap  
Files, Kaya alu gugu. 40 m tall  
70 cm dbh. Barkness to 2 m  
2 m out. Bark black, covered in algae  
1163

Heartwood. Stark brown, wood  
hard - lvs. alb.

A50

A51

A52

A53

Seedlings (A54)  
(4)

A54- 3711 - Jelitang. ~~Artocarpus~~

Artocarpus

Tree 35m high 70 cm dbh

Slightly buttressed at base, 1m dbh  
2m dbh. Bark grey/black. Shallow  
unmarked and then white/yellow wood. Copra  
latex. 700 m. steep slope

A55- 3968 - Kuang x lithocarpus ✓

Tree 25m 35cm dbh. Straight bole

Bark medium brown, smooth, cracked

Lichen patches. Inner bark orange  
and inner bark white with vertical rays.

Conifer-like.

(5) 11.11.11

A56 - 3427 - Nyatoh ✓  
Tree, 45m 80cm dbh buttressed 2m  
from base 1.5m at buttresses blunt  
Bark yellow, inner bark red, latex  
white. Capex butt top 800 dbh. on  
slope over water course

A57 - 939E / 29 - 2471 <sup>10x</sup> 57  
Majan - Shorea palembanica M9 92

Large tree 24m. Bark olive brown, furrowed  
inner bark red yellow and fibrous  
with. Buttresses 2m high, 4m wide.  
Wood red [Photo #1]

A58 - Macaranga neri - 2612  
Buttressed to 2m, 2-3m at, 50cm dbh  
inner bark yellow, wood red

→ Majan dominated area

30m - rotang  
→ 6 hrs 50K  
Burnt / mchiam

3122/27 8/27 12/28 17  
2.8/3

~~646' clay soil, 35° slope~~

~~A59-9585/28 - 3122 - Keruing~~  
~~2718~~

~~25m tree, 70 cm dbh, 1st branch 15m.  
B. H. wood 1.5m, 1m cut. bark dull,  
brown~~

"Rotang"

A59-9856/32 - 2727 - Mm

40m tree, buttressed to 2.5m high 1.5m cut  
B. S. red at 1.5m, pith red. 1st branch about  
20m up. Mild slope below 1st branch. No  
large vines. Wood red dark  
~~sp~~ sp like this too

A60 - 2729 - Mm

~~Butt~~ 30m tree. Buttressed to 0.5m  
Straight bdc

2706

A61 - ~~2706~~ - Mersawa - Anisayana  
30m tree, buttressed to 2.5m, 2m and  
fissured/shag bark

"3 types" Heavily mist  
Bark white, thin (rel.). Inner wood white

A62 - Mm - Yellow wood

2709

30m tree, 70cm dbh. ~~Thin~~ narrow  
buttressed to 2m, one on one

Lichen, patchy smooth reddish-brown bark  
Wood yellow-dark

A63 - Desc on A59

A64 - 983E/72 - 2737 Malaysi  
Tree 20m 100 dbh, 15m to 1st branch

Small buttresses to 1m, 1m and, wide. Bark  
wide fissured, chocolate brown

BARK #10 Slash and wood white

2 types noted by cutters

Ab5-2739 - MP

Tree 35m tall 100 cm dbh. Buttresses narrow,  
1.8m tall, 2.5m out. Bark fissured scaly,  
red brown. Stems white. First branch 20m  
up. 11 Lvs glossy green. Young flowers  
red-purple

A-16 - No number - marked 157 "X" (9856/30)

LOGGERS - KERWANG

25m tall, 150 cm dbh, 2.5m wide  
buttresses, 2m out. Bark pinkish white and  
white patches, smooth, seems to flake  
spinally. To a stage first branch 10m up.  
Fresh damage white older damage black  
Distinctive smell

THIS IS BURSERACEAE

Carriacou?

"Not seen before Sealer will prob. mark it  
Kerang".

Ab7 2435 "Meanti patch"

25m tall, 100cm dbh 18m to 1st  
branch. Narrow buttressed to 2m,  
1m out. Bark scaly, fissured, white  
orange. 23-24

Flashes red hot. Leaves glossy.

→ 2807

Ab8 "Melapi" 25m tall, buttress  
>1m, 1m out. 15-20cm to 1st branch.  
Bark red-black, shaggy - large scales.  
Flattish area ridge top, 100cm.

Ab9-985/36-3031 -A

Kempite. Tree 25m, 60cm dbh. Bark  
gray brown. Hooped. ~~Shaggy smooth~~ Shaggy  
red, inner wood white. Buttressed at base,  
0.3m high, 1m out. A. as before.

A70-985E/39-3122 KERNING

30m tall 80cm dbh, 12m to 1st branch.  
Middle widely buttressed, 1-75m high,  
1m out. Yellow barkhubs on bark. Bark  
~~smooth~~ mildly flaky, shaggy. 780'  
by nodular

580' ↓ 4 trees 2 m tall; bark grey; 2 light; bark  
LITHOCARPUS 16

2903 100. LITHOCARPUS 16  
9436/32 2500 - VIRENUS

A71 - 25 m tall 20 cm to 1st  
branch 60 cm dbh. Bark smooth, ~~light~~  
0.5 m high, 1 m dbh. Bark gray, dappled,  
slatish white under bark. Bark  
black, pec. fissured, dappled

A72 - Shave 15 m tree, 1st branch 10 m up.  
Bark gray, smooth, wrinkled, lichen patched. Leaf  
dark green, lustrous.

A73 - 25 m, 40 cm dbh. Bark brown - red  
slatish yellow, inner bark yellow. Bark  
lichen patched. Twigs of brown internodes.  
Lvs glossy light green. LITHOC 500  
500' on a ridge top. Malic. - 100. Aplau?

20x-440' 250' - Muse

10255 crin

Durian - Tenghai. Frt. small. Lt red  
A74. ~~10m~~ - 25m, 10m to forest branch  
Buttress to 1.75m tall, 2m at. Bark  
red chocolate. ~~juicy~~ ~~wood~~ yellow  
Fruit soft, slightly fleshy. Heads of  
vines and epiphytes

Norman Mm

A75 3314 - (986)

Part. 30m tall, 20' dbh. 15m to  
1st Branch. Bark gray-black, hooped  
Inches patches of hooped, and white  
patches > 10m. Flesh light green yellow  
Buttress 0.3m up, 0.75m at

A76 - No H - Mix - What Engoria  
18m, Buttress 2m up, 1.5 up  
Bark orange, inner wood light brown.

Tag list

A77 - Champaka 18 m tree, 75 cm dbh  
Buttresses narrow, to 3m, 2nd bark  
with a ~~thin~~ 0.5 cm vertical line of  
between 4 or 5 ones. Bark  
white. ANTS LIVE IN TUNNELS

A78. Meranti kuring 22 m tall, 150 cm dbh  
Buttresses to 3m, 2.5 m up, Bark black,  
fissured. First branch 18m up.  
Wood yellow.

A79 - Kering 93.6/11-816 20m, 19 cm dbh  
1st branch Buttresses 0.3m up, 0.75 m  
up. Bark light grey, shaggy, scaly. Bark  
white. Bark hairy beneath.

A80 936 - Mm 792

A80 936 Mm #792

20 m tree, 15 m to 1st branch Bark grey,  
narrowly fissured. Buttresses narrow, to 3m  
up, 2nd.

A81 - 2942 - Kalam

NA Sandrin - has 25 leaflets. Tree  
 25 cm, 100 cm, 15m to first branch. Wide  
 buttressed to 1.5m up, 1.5m at. Bark  
 gray-white, furrowed and scaly, covered  
 in large brown lenticels. Inner bark light  
 brown, wood yellow

A82 - meday - (mm) - 1481

Tree, 20m 15 to first branch. Bark  
 narrow, 0.75m, 2m at. Bark white,  
 scattered lenticels, hooped, inner  
 bark red, hard, wood white

~~A83 - Pearsonia - (KRM) - 1/1 - 2642~~

A83 - Bintangor ✓ Pohnani

Tree, 18m, 12m to first branch: 60 cm dbh  
Bark olive-grey, shallowly fissured. Stam red  
w/ yellow-orange sap. Wood yellow  
800' steep slope

~~Sum~~

A84 - 2347 - Bintangor ✓

Tree, 15m, 30cm dbh, 10m to first branch.  
Bark straight. Bark grey-brown with lichen  
patched, fissured. Sap ~~dirty~~ yellow.  
760' alt, steep slope, primary forest.

A85 - 2349 - Durian -

Tree 25m, 15m to first branch. Bark red-brown  
w/ green lichen. Stam orange red, wood yellow  
Baccaria in leaf ax.

A86 - 2392 - UB XXX

Tree, 15m, 10m to 1st branch. 30 cm dbh.  
Bark straight, <sup>flaked yellow</sup> red brown, slightly lichen  
patched, smooth. By ridge top, 800'. Stam  
yellow w/ white streaks

A87-2601 - 920' slope - clay. primary forest  
Tree 15m, 35cm dbh. 8m to 15' branch. Bark brown  
at base, 0.5m up, faint. Bark red brown, of  
small flakes, inner bark red-yellow,  
wood yellow. Strong smell of eucalyptus.  
Two alternate dark green above, light below.  
Black dotted below (very).

A88 - Kulim  
Scodocarpus brownian. Oleaceae  
Bark brown, light brown, inner bark bright  
light red. Wood white. Strong smell of  
onion, garlic.

A89-2770 - mix X Sapindaceae  
Tree, 20cm, 55cm dbh. Bark brown 2m  
up, 2m up. Stash <sup>yellow</sup> wood <sup>shallow</sup> bark  
gray and white, peeling strongly.  
Opp leaves alt 1 ft apart, 4 stems, no  
terminal fls.

A90-2996 - KRAM

Tree 25m, 6m fr. 40cm dbh. Bark 1.5cm  
0.5m, 1.5m. Bark deeply fissured, hooped, light  
gray. Flesh yellow, white sap, wood white.

26 x 92

A91-2397 - mix - Dpt

Tree, 15m, 7m clear to 1st branch.  
Bark 0.3m, 0.5m. Bark gray,  
shallowly fissured, ~~red at white red~~.  
(Ridge top, 820). inner bark red-brown,  
wood white very hard, limited damage  
yellow-brown when old

A92 - Eugenia Shrub 4m, gray bark,  
smooth. Red inner, yellow wood, bark  
dark above, light below. Flowers  
in axillary cymes, leaves at axils  
fleshy, red below, green above, 4 petals, white  
fleshy (dark red color) purple line  
edge yellow. Filaments purple below, white  
above. Anthers yellow.

800', ridge top on brown red soil.  
Sweet pungent aroma

A93-2656 - Kapuah. ✓

Artocarpus

Tree 10m, 5m clear. Buttressed to 1.5m  
Ø 5m at, 50cm dbh. Bark yellow  
orange, very strongly reticulated  
inner bark orange, with veins & prominent.  
Bluish-grey LAMINATIONS. ~~Bark~~  
Wood about 15/ darker laminations.  
RHS cpd, 5 fls.

A94-980-367. Rongas

Tree 15m, 10m to 1<sup>st</sup> branch, 50cm dbh. Fluted at  
base. Bark orange-red, long narrow and shallowly  
fissured. Inner bark yellow orange, wood  
white. ~~1020ft~~ Say + dist. ex. rising black  
1020' at top of a ridge top.

A95-010-3622

Tree 30m, 25m to 1<sup>st</sup> branch, 40cm dbh. Base  
fluted. Bark very reddish brown, shallowly <sup>narrowly</sup> fissured,  
inner bark red, wood yellow. Carpenter white sap.  
Tree off ridge top.



A96-980-3626 - ~~Uruk~~ Cratogeomys  
 Tree 15m, 10 to 1st branch, 40cm dbh, elliptical fruit  
 base bark white, smooth, inner polished, hooped  
 inner bark red, wood white, yellowish  
 colorless clear light red sap, sticky.

A97-980-3501 - Eucodia  
 Tree 25m, 10m dbh, 60cm dbh. Bark smooth  
 3m, 3m put, very narrow. ~~Bark red, small~~ - <sup>crazy</sup> <sup>green</sup>  
 flaking, lvs all, compound with 3 leaflets.

A97-980-3507 - Rengas

Tree 25m, 15m to 1st branch, 40cm dbh.  
 bark smooth 2m up, 0.75m dbh. Bark red-brown,  
 shallowly and narrowly fissured. Sap clear, solidifying  
 black inner bark thin and orange, wood white.

SAMAK

27 x 1990

A99 - 640' by stream

Shrub, 5m, 10cm dbh, slash white w/ yellow or  
late. Leaves light green above, lighter green below,  
bracts red. Fruit round and rippled, 5cm dbh. Bark  
Rose red when ripe. Pungent fleshy, white part  
w/ yellow latex for seeds. Flattened, covered  
in white flesh.

Sold in market @ 2000/kg - Asam kandis - Asam  
sayur. Rarely in market. Taken from forest

A99-889-3398 - SAMAK PELUT

Urb. Tree: 2m, broken. 70cm dbh  
1st branch 8m. Puffballs 2.5m high, 1m dbh.  
Bark orange-red, flaky, inner bark  
Blood red, wood cream yellow  
Blood red ~~inside~~ sap.  
"Scent" - we felt drying. 700'  
Mild stage, Exudate sticky  
Exudate used as dye, buting for construction,  
fragrant

A100 - 980-3626 - *Cratogeomys* ?

Tree 15m, 8 to first branch

31x1992

A100. 602/36-3270

MK - 50m, 170 dbh buttressed 4m up,

6m at, bark pale, furrowed, stark yellow  
laminae yellow and black. 720', 30m above  
stream, fls. near. Exposed by logging road

FLOWERING. Leaves light green. Flowers pale yellow.

Small thalam, musty sweet ~ like honey. 30m

long, 30m at base. Lowy fls. after 20

thru soil

3 x 1992

A101 - Eugenia Myrtaceae. 560', by a large stream

Tree 7m, weeping over river bank. Bark ~~black~~ Bole

white bark milky flaky, fibrous and below, wood

yellow white. Bole slightly buttressed and w/

more no stilt roots. Lvs dark green above and bluish below.

Fruit unique<sup>3m</sup>, ellipsoid, single seeded (Iris adnate).

Largely to cotyledons. Tringe white brown color

~~A102 - 889 - 1922~~

~~740' slope, Tr 15m 45cm dbh~~

A102 - Petak 889 - 16 #

Bombacaceae

820' clay soil on a slope. Tree 7.5m, ~~10m~~ 10m to first branch. 40cm dbh, flanged at base. Bark red-brown, hooped, lichen patched lower bark orange, wood yellow. Old fruit thin sample taken.

Mel.

600' river bank

A102 - *Tuhing riga* (VERN) - Dilleni

Tree, 6m, 4m to first branch. 15cm dbh. Aerial roots present to 20cm. Bark red orange, moss covered. Slush orange wood w/ red striations, 15m white w/ yellow striations. Lvs green above light green. Flowers dull green, 5 styles, Aoo, 5 calyx, petals missing. Used for lining houses, brownish

A103 - SAMPUR KUAR - Annonaceae gum

Pregnant women to reduce heat and swelling feet - progesterone. Shrub 3m. Drink or use as a rub

Artocarpus

A-104 Montane Rainforest Tree, 20m, 5m to first branch  
Bark grey, shallowly and irregularly fissured, deeply  
further pitted. Inner bark orange, deeply  
white latex. Fruit mature, brownish red-yellow fruit,  
young green bark can be used as rope. Tanka can be  
used for rice holder, gamma-guitar

A105-889-3149 -SAMPOK - Dacryodes Bursera

Young tree, 20m, 30 cm dbh. Narrowly buttressed  
to 0.5m up 0.75 out. Bark brown w/ small  
white lenticles. Slash white w/ spotted brown  
latex spots. People look for fruit, sweet and  
tasty March-April. 2kg for Rp1000 if sold.

One of its types only IMPORTANT.  
Wood hard.

A103 - Kayu bansalam. living fence (Pagar)

Small tree 5m, 10 cm dbh. Bark light gray  
slightly fissured, thin. ~~Bark~~ Wood very smooth,  
creamy yellow. Fruit depressed globose, pink and  
white. 2 seeded, pit creamy-white, purple  
blue to blue, purple skin. White endosperm. Can be  
eaten, but sour.

A107 - Banna - Bursera - Tree 20m, 10m to first branch. Bark deeply and lenticles dirty cream-colored later. Outer bark grey. Inside, inner brown, very fibrous. All canalicles <sup>very</sup> black. Wood for boards, ~~boards for~~ joint (paul). IMPORTANT SPECIES.

A108 760' on clay slope

889-2151 - Medang Simati. Tree, 30m, 15m to first branch. Bark dark red, deeply slightly stippled. Buttressed at base 0.5m up, 1m out. Slash brown, granular inner bark, wood yellow. Bark lenticled, lenticles running vertically. Lichen spotted.

A109 - 889-2156 (740' on clay slope)

~~Wah~~ - Tree 15m, 10m to 1st branch, 50cm dbh. Fluted at base. Bark deep red. Slightly deeply inner bark thin and orange, wood white. Used for boards, sticks.

A110 - Kaprak pinang - Fruit edible Tree 15m,  
straight bole, slightly elephant's foot at  
base. Bark black, slightly fissured, dark red-bran,  
cayan latex

~~A111~~ 2889-1828

A111-889-1835 (Kasak nangka) Vatica  
Tree, 30m, 25m to first branch. 50cm dbh.  
Bole straight and slightly buttressed at base, 0.3m  
up, 0.5-1m at base a collection of grey, hooped,  
smooth w/ barklets & little grey chamber at  
60m on a slope. Has p. furrows for upper slopes. Important  
to local people for building especially for boat construction

A112 - Buah linyang - Sapindaceae - Rp1000 for 2/100.  
Rupers green-white, Feb-March flowering time. People  
search for it in the area. Potent species. Seedling  
taken. Very like a rambutan - Nephelium?

A-113 - ~~1455~~ 889-1458 - Cratogeomys  
Ternan - Simp (tiles) made from wood  
Commonly used, especially for boats. For boat  
it's the best, better than other. Up 35,000 for  
1000 tiles. For floorboards, better than  
meranti

Geranggang rose prefer water  
Tree, 25m 10m to 1st branch. Bark rich red - choc,  
narrowly and shallowly furrowed. Bole straight,  
flanged at base. Bark flaking, slash orange-red w/  
sticky dark orange red latex. Wood yellow  
creamy yellow.

A114-889-1252

Durian Tenaga / MATUA - Cactaceae

Tree, 15m, 10m to 1st branch. 40cm dbh,  
slightly buttressed at base. Bark grey, finely and  
narrowly furrowed. Inner wood thick brown,  
wood white. Leaves white below w/  
few gold scales. Can eat fruit. Lignified by  
fibrous layers, almost like skin, under bark. Trunk  
is a THE BUTTRESS ON L. Buttress 0.3m up,  
0.5m and

Bale fibrous and sticky -

→ Reticulate?

ma, i

Shrub  
↑  
tree

A115-889-1251 - Kayu man majik

Young tree, 10m, 7 to first branch (Can get to 25m)  
35 cm dbh. Fluted - mildly buttressed at base, p. 75 cm up  
0.3 m act. Bark red-brown, very finely striated,  
0.5 cm thick deep red-brown inner bark, wood yellow  
1000', clay soil on top of a ridge. Used for  
"balek of tongkat. Leaves opposite. Very strong, not  
used for making firewood boxes. <5-6> Good for help with,

A116 889-1249 - Marauing/Kayubutuh There?

Tree 20m, 15m to first branch. 50 cm dbh.

Bale straight Bark light orange-red flaky,  
inner yellow. Inner bark, patchy lower  
bark thick w/ a mild striated flaky fibrous. Inner  
wood white-yellow. Tongkat/balek - very strong  
only if near house. Lvs. in terminal pinnate clusters,  
dentate. Base, lobes to tree at ridge top.

A117 889-298

Kayubutuh. Used for

stiles for houses. 2nd only to 10m  
1100' on ridge top. Bark ~~light~~ pink like balek.  
Heavily scaly flaky

Tree 25m, 15m to 1st branch 50 cm dbh.  
Bark 100', 2.5m up. 0.5m act.

Bark muddy red-brown, mottled grey, inner  
bark red, wood cream white w/ yellow  
streaks. Fruit globose, 5cm wide, are seeded  
woody pincery.

Kann BAHN

A118 - 889-284 - Kersurai bahit - 1140' on  
ridge top, locally said to be common.  
Tree 20m, 10m to 1st branch, 70cm dbh.  
Bark white-grey, large flaky. Buttresses  
1.75m w, 1.75m out, thin. Slash hard,  
inner bark brown, fibrous, 'pinky', woody  
creamy white. Lvs glt. Under ridge top, in  
open places, lvs plenty of sunlight. Good for  
branch, if loan. D. proceraceae of  
some sort.

A119 - 889-419 - Kumpang bahit (Aman)  
NOT Myristicaceae, Tree 15m, 30cm dbh.  
Buttresses 0.3m w, 0.5m out. Bark very black, large  
flaky, slash banana yellow. Lvs glt.

11 xi 1992

kapur

A120 - Mbak - Fruits from branches and trunk, 3-4  
seed, white - prob Baccaea. Tree 7m branched at  
top, 480' clay slope. People plant it, 5-6 years to  
fruiting. If lots, sell 1 gabung for 100. One  
tree makes 50 gabung. Bark fairly hard, orange, both  
orange-grey. 3-4 sp. Mbak kapur, bark, bark  
orange, selenik. Up pang. No seed.  
Mbak kapur the most widely planted. Planted from  
forest. Fluted at base, good fire wood

< 3-4 for fruit >

\* Alstonia used for chine, yang but also. Sometimes  
planted 5-6 years until useful

A121 - Timan brassi. Ficus. Eaten fruit, but some  
popular as vegetables, fruit etc. Good for sick  
stomachs. Tree 6m, white bark. Not planted. Use  
hardy in pany forest, usually big tree.

Indicator for white soil < 27

Leaves used for fertilizer (subur)

\* Zingiberaceae. Bunt and used as paku in cooking.  
Rum panyan.

① ★

A122 *Bach nadap*. Tree, 8m 30cm dbh  
red bark, thin inner part, buttressed 2m.  
~~dark~~ Red or yellow skin. Hair short  
than comb. Good fruit. Often sold 1kg  
for 500. One tree 200kg. Often fruit  
fell by ground for fruit. One family with  
house 2-3. NA for food.

<6> 5-6 yrs. to fruit  
- (10. → Tanager)

A123 *Umbin - Baccoursia* like a *Bilimbing*  
6m tree, 20cm dbh. Fruit red. Flashed  
and in fruit. 5-6 yrs to fruit. Lvs very light  
green, 20cm visible, not red. <3>  
R 500/kg.

*Pota-sega* 4-6 yrs good. Super. No  
family with plant 1 ha for a family.  
10 tonnes per ha. The has 300. Plant  
of TEV and other already planted for  
40 yrs. 1 yr can sell for 2,000/kg. Others  
1,500. Price dropped 4-5 yrs ago.

A124 ~~Entina~~ <sup>rain</sup> - geocarpic fig. Edible, sweet  
Goh to 5 m, red bark. Small fruits, oval, 1 cm diam.

1 or 2 m  
Closely related sp. 124-125 same.

A125 *Entina* ~~keenan~~ Goh to 5 m. Both red bark  
w/ horizontal lenticels. Geocarpic figs good  
for eating. Leaves good for feeding. 2nd  
sp. ~~Entina~~ <sup>keenan</sup> was. Fruits 3 cm long

Many people don't know these are edible. Good for  
cigars <37>.

A17 to Mawang - Mangifera. 1" and 2" fruit  
Saw planted. Fruits eaten and seeds which  
used for burning for 250/ ft. Tree 7 m, goh  
<47> big, bark strongly fissured, red, rough.  
Leaves pointed.

A127 *Keenan* - Mangifera. Same as 126  
R 500/ ft. More sweet than ordinary  
[47]

*Keenan* / Mawang. <sup>some</sup> being ~~same~~ but different  
Chewable latex is sap.

Rambutan can coppice

A128 - Tekala - Zingiber - 4 m high  
Bushy, medicinal for scab, fruit, fls  
for veg, umbel (stem) for veg. Stem used  
in d. for Rading fruit

<40> Used. Janabes plant. May<sup>2</sup>  
competition. 2-3 yrs until they start  
logging but can be used any day.  
(Can good food)

A129 - Akor emprinat - Yampung  
Vine 20 feet. Bush for medicinal  
sick stomachs. But light green leaves  
not light green above - 2 ft. fruit

A130 Medangkela - 15-20 m, thin  
can 5 bark like Kaya white yapa.  
Kp 500 g. 100 lbs. From village  
3-4 yrs to fruiting. Wood good for boards  
but fine wood is important. EAST

GROWING HIGH SEED SURVIVE YERN EAST  
<5-6> GROWING

Buhr

13/11/60 - Rainy. Spring - Makran, ataf

F131 Riang pandan - <sup>Asyria</sup> ~~Cargh medicine~~  
especially for young children. Dream vegetable.  
Stems and roots bitter. common. Patch yellow,  
Patch white, Stems yellow.

F132 <sup>[B]</sup> ~~Heauang~~ - <sup>Syntherisma</sup> Octameles - Same as ~~Heauang~~  
Kalan! (bitter) Tree 20m, buttressed to  
3m up, 3m out. Bark grey, light grey at  
wide base, ~~pushing~~ <sup>very</sup> fresh ~~leaves~~ <sup>leaves</sup> from  
all branches. Can be cut by SAK. Cl!  
Fast growing. ~~Somewhat~~ <sup>VEGETABLE</sup> ~~VEGETABLE~~ <sup>PERMANENT</sup> ~~for~~  
~~Stems~~ <sup>Stems</sup> ~~bitter~~ <sup>bitter</sup> ~~leaves~~ <sup>leaves</sup> ~~are~~ <sup>are</sup> ~~just~~ <sup>just</sup> ~~as~~ <sup>as</sup> ~~a~~ <sup>a</sup> ~~vegetable~~ <sup>vegetable</sup> ~~leaves~~ <sup>leaves</sup> ~~are~~ <sup>are</sup> ~~just~~ <sup>just</sup> ~~as~~ <sup>as</sup> ~~a~~ <sup>a</sup> ~~vegetable~~ <sup>vegetable</sup>  
Stems yellow, fibres Lvs. ~~cl~~ <sup>cl</sup> ~~at~~ <sup>at</sup> ~~base~~ <sup>base</sup> ~~in~~ <sup>in</sup> ~~life~~ <sup>life</sup>

F133 460 by a stambed Passiflora, Fls. red  
orange. Good for ~~some~~ <sup>some</sup> ~~if~~ <sup>if</sup> ~~any~~ <sup>any</sup> ~~leaves~~ <sup>leaves</sup> ~~are~~ <sup>are</sup> ~~just~~ <sup>just</sup> ~~as~~ <sup>as</sup> ~~a~~ <sup>a</sup> ~~vegetable~~ <sup>vegetable</sup> ~~leaves~~ <sup>leaves</sup> ~~are~~ <sup>are</sup> ~~just~~ <sup>just</sup> ~~as~~ <sup>as</sup> ~~a~~ <sup>a</sup> ~~vegetable~~ <sup>vegetable</sup>  
good for young children. ~~leaves~~ <sup>leaves</sup> ~~are~~ <sup>are</sup> ~~just~~ <sup>just</sup> ~~as~~ <sup>as</sup> ~~a~~ <sup>a</sup> ~~vegetable~~ <sup>vegetable</sup>

A134 - Yakima - Maceranga - Flat ranch  
Fast growing. By river.

ACTIVE LARVAE

A135 - Sauwaia - Pagar - Rich soil

2 Ngingur 7 & C(5) K<sub>0</sub> A<sub>9</sub> 50 5 styles  
and (C<sub>5</sub>) K<sub>5</sub> (A<sub>9</sub> 50) Gynsamin!  
Good living force. Cut, sticks in the  
ground and it roots. Anthers yellow, hairs on  
calyx red. Infls. coniform. Shrub 4m,  
bark grey brown.

A136 - Manyan - Flat ranch. Cylindrical  
Cylindrical. Some leaves dark, some light.

Fls. yellow. Marcicron C<sub>3</sub> K<sub>3</sub>  
Most fls. 2. Fine of young seeds.  
Fls. yellow. 6" diam. Bark grey brown.

540' on rock stream bank.

Timor pch. 2 fls. 10 cm. but fruits bigger  
and not good for eating.

12 x 1'97

500' 10' forest

A-137

Partung - Tabernaemontana Apocynaceae

Quite expected Rp 900,000 seeds etc.  
<9> Tree - can get to 150 cm dbh.

This one 42 cm. SBE cut. Flayed at base.

Common in forest OPERATOR cut. Bark  
white-slight grey. 1 yr - 1 tonne - Does below  
Rien B. Plung - too much work for me to  
do. Good. Body, 12 cm dbh, white  
bark. 18 cm dbh.  
Fruit like a group of yellow fruit.

A-138 - Empahong - Baccara. Can be  
eaten after cooking. 6 m tall. 20 cm dbh. Bark  
light grey, smooth, fruit, green. 5 cm  
diam. 15 cm dbh. Fls. white, deep green  
x2 - I can go about because of fruit.  
Fruit like 10 or 15 cm dbh. 15 cm dbh.  
confused 15 cm dbh. 15 cm dbh.

Photobank - many types. 15 cm dbh. 15 cm dbh.  
for tally and sample. 15 cm dbh. 15 cm dbh.  
15 cm dbh. 15 cm dbh.

\*

Pithecellobium

Tengkai - Pindai

A-139 - Kemar Komanyang <5-6/

Frts. and ~~are~~ less good for eating. Trunk  
goes to 5m wide. Tree 8m, 30cm dbh.  
bark brown smooth, slat smooth yellow  
strong smell of anise. ~~Yellow~~ sap

Rp 500 one tin. "American people plant  
it. 2-3 trees per 10 family

Fruit green, flat except where seeds are. Very  
poor. Felled by 300 ft for food.

Fruit green, ripening yellow. Seeds brown.

5 yds to fruiting. Good for all.

Only 1 type, other types by river, less good,  
but still good for eating, and good as soap.  
In dry areas and high slopes, rarely by river.

A-140 - Tekauai - Diuani - buah merah

big red, and yellow (dark) 4 carapels approx.  
More popular than diuani. Planted - every family  
has one. Rp 500 for a good ft. Mac before  
the diuani. Sell to other villages or camp.

<87> After found forest. Fruit of every other  
tree. Usually once, and for 10 ft per year.  
Up to 1000 ft per tree, at Rp 1000-2000

Get "big" usually river to top a bit of  
slope. Rarely in dry areas and high slopes. Common  
Tree: 10m, 25cm dbh. Shell and wood like

20%  $\frac{1}{2}$  = 10% of 50 = 5

SEK collecting material is damaged.  
Usually 30% recover, 70% die from tractor  
hits. Fast good for work - down 3 days.  
To get more get board of it. too painful  
to dig.

good. fit 4 yrs ~~15~~ 10 km a  
couple of years faster than in Villager road  
race.

\* R/R axis has opened and falls at  
10 hours becomes right.

A141 - Berangan hulu elang (B) see back  
Pigs like it most. People eat it. Important  
for building. Good for local building R.C.  
As same Kemp. Skin strength 2000  
lb, same same. Tea, 20m 50cm thick  
(can get 1000 lb). It is as usually  
not enough. Bark gray shute, inner yellow  
large, rest shabby and narrow. Young  
dark brown. Real skin all white wood.  
Wood strongly stained - very hard.

A-142 - Tree details as A115  
too: Primary forest. #

A-143 - Breughasi (S) Lycopodium  
Fruit downy and sticky if seen. Used for  
spring traps. Good for fire wood  
5m tree. Bark grey, smooth. Fruit like  
Rambutan but no hair.

A-144 - Riga - Important for shingle.  
Cuts test ~ 60 cm. SBL don't cut  
it. Also used as "kayu balok" and boards.

Tree, 7m, 20 cm dbh. Bark smooth but a bit  
rough, hooped. Slats ~~and~~ yellow brown.  
Wood hard 750 ft. ridge top. Saw  
of place it likes.

C<sub>0</sub>K<sub>4</sub>A<sub>4</sub>g. Fls yellow. Petals roll back  
(explosively?) and then interlock.

C<sub>0</sub> Yes! So if animal lands on top, sprayed  
w/ pollen

A-145 - Ratansega - planted in  
garden (10000/kg). Gets to round  
thickness. Grows on hills and by river.

0.5 - 1 ha / family sometimes more  
sold to people: Banjar Masin, locals to  
'Kecamatan' - local market town.

Can get 10 cut of up to 5m each. = 1kg

3-4 kg for one plant.

5-6 yrs to grow. If cut, grows more short.

A-146 Rp 5000/kg - sub. (70)

Lives by river. 4m shrub. Bark used.

Processed like macaranga coffee.

Behggy. ~~the~~ Shallow, narrow and delicate verticillate

A147

Durio - Km 83. 1/2 550 (LANTING)

Tree, alone by river of bank of steep bank  
10m from tree, 12m, 30m, 80m. 10m from  
first rd, seeds in it. Leaves for sapling  
light green, golden brown below.

Kalbar - Sirsah - Nayin Kalender

Litsea - Medong Kala (Engkeli) <3>

Boards from wood, 8811 with ink 10 g/l for  
fits in a year

Sengkhung - Sankin - Bas. <1> fits in little  
used for goldpinning. Don't have

Sin Lutz - 100% thick wood. C. ...  
about 1/5 difference between ...

Bridge 105

W. in - [1] : 50 : 70 : 80 : 90 : 100 - All x 1000 bridge

Kr 85 W. in : 50 : 60 : 70 : 80 : 90 : 100  
② 20 : 60 : 80 : 90 : 100

15m

Kr 85 7. km - 9m small.

Kr 84 8. km - 7m 20-40m [3]

Kr 79 0. km at ... - 1000 bridge



7-V-96 USA-MIA-Cambridge

Ann Arbor Dir. Serv., 30m E of Irvine St.

1 block from A. Flat area grass under  
240m L L

JARVIE

~~200-7512~~

C-1

Arctostaphylos, fls. pinkish

10 cm across. Fls. yellow

C-2

Fragaria. Quesada

Tree, 12m ~~60~~ 60cm dbh.

First branch ...

3 Aug 1

C-3

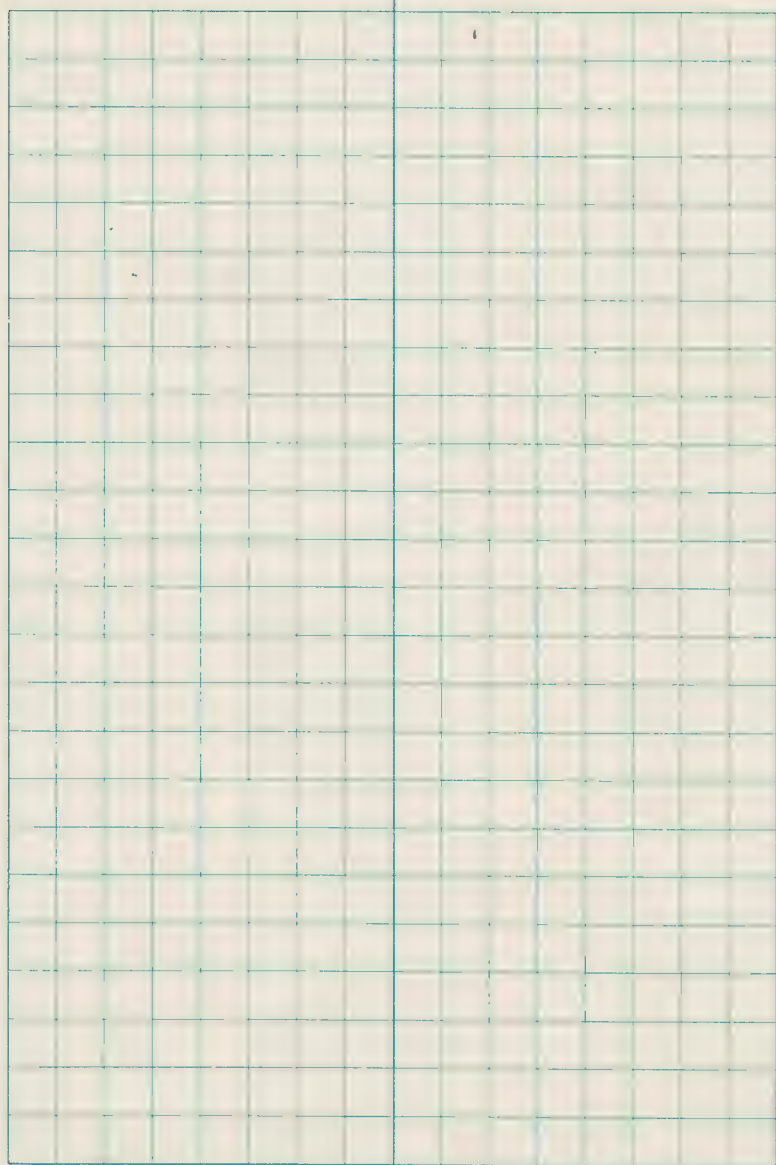
3 Aug 1, 1996

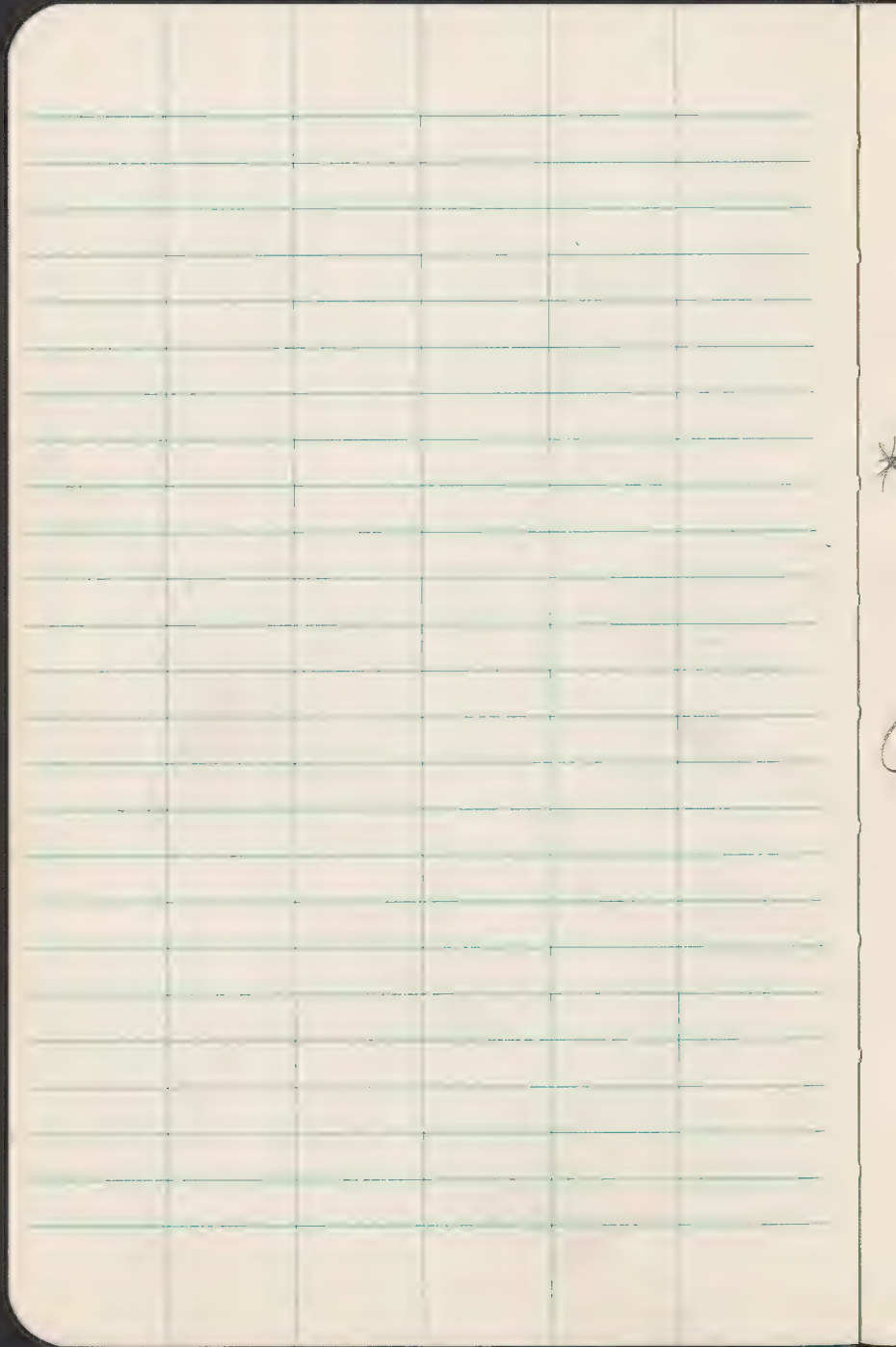
By Charles R.

CS

C11

~~29~~ 9 v 96





BERANGAN - Cetanggis - Batu (3)

Can be used for building - 2 types

Barang ~~hasil~~ <sup>selukedang</sup> selukedang } (atang = class)  
Keraga <sup>kerukedang</sup> belatung (banci)

Reagen belatung (banc)

Boal grows by river to ridge tops

\* Belandda - Em? Red berries 16 purple seeds. Frt and lvs used as a domestic use only.

Brangfalsi - Revisi

(Sindhu) - Scardaphysa

Kedondong - Dangkal - Gerdor  
cenderung (5)

~~Tapi~~ <sup>Tapi</sup> Tapi  
- engkok - good fruit making plaster

Saniak - lithoull skin by river. Only by river

(8) <sup>tashir</sup>  
Petai - padi - small bud  
papa - bulat, big wide } staples  
biasa - flat, big, long } rice  
↳ including important village - in  
distribution

Liang - small rambutan, "corolla" as seed is small, "dog's" thick and flowers small.

(10)

Kapu - 2nd only to Ulu for importance to building

★ 764-156 - TKW<sup>8</sup>

Bah fann... by river bank. White flower  
Slight cream yellow wood & yellow

Riam BATAAN -

Wood can be used as a living fence. Carpinus well - as it seems for living in shelter saplings.

Bang Kuan

Wood for roof tiles. Wood for building.

Simpot

Bush. Used for young children - rather no. 1000.

Oil - Good for lamps - use like cotton

Bark - has to get good bark get

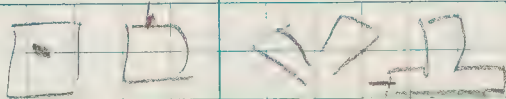
1-2 litres - 1 jar 557. Wood

good for building. Oil occasionally used for lighting.

3 types. By fruit - black, yellow, red

Tender some, fruit. Types grow in all sorts of places

Medang paho - Used for boards. 20m tree, 60 cm  
dbh, bark white, hooped, inner bark thick, red-  
<sup>orange</sup> yellow, very crumbly. Slopes and by river. V.  
common. Wood smooth cream white.



axile



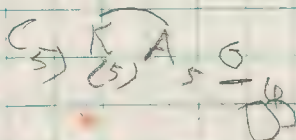
parietal



Apical



Basal



Imbricate

TRICARPEAE

STERC

MECHISPERM

LANA

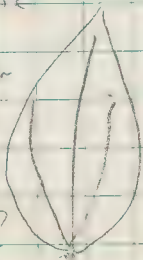
MANT

RMZ

FLAEL

UOM

UOT



3' 7



Valve

TOROU - *Scorodolobos borneensis* - *Glauca*  
Batang used to make stick frame, down until bamboo,  
budi dikenai song. Fruit can be eaten but cheap  
important for local people

Riang bukit - *Begonia* - Used as fertilizer  
Take juv. fruit and plant. Good fertilizer and  
competition for along-along. Leaves pandered  
and round. *Morata* can use for coughs. Leaves  
eaten as vegetable w/ fish or meat - asam.  
"ISKANDAR 2" Used for food and  
blood poisoning, vomiting. 940 as leaf.  
Fl. white. Leaves dark green w/ red on young  
lvs red. "Kampung Seck"

DURIAN - *Tangkoi* - Green round and long durian

BANGKAM - KENCAS - Bagus untuk puyer, tapi gatal

Manyi - Balek / Taghut are the weds.

Berangkang Dysentery

889A)

Chunee

1252 - Durian (Cedatigina)

1254 - Kerang (Wah)

1262 - Mm

1251 - Kayu mājijh

1249 - Marang

1107 - Bintangor

675 - Wah

474 - Beach rangle

475 - Kerang

309 - Durian (Cedatigina?)

306 - Kerang

298 - ~~Abak~~ Kayu buluh

292 - Pengao

289 - Kulon

288 - Kayu buluh

284 - Kersairai buluh

275 - Terakawang

4119 - Kumpang balih - one type only.

3504 - Kerang

3180 - Medang ~~baluh~~ gaho

Rasak nangka - 8'60" on slope. 40 m. tall, grey bark  
smooth w/ lenticels. No ~~heart~~ <sup>heart</sup> ~~wood~~ <sup>wood</sup>. If it  
has, rasak sga "gabal" heart wood

Kaya baleh - Hard wood - good for caned  
logs - Flacourtiaceae. ~~Hydro~~ Rarid get  
big

Kayu Liang -

Kempile - Young pale - to the seed rice. Fruit  
boiled and eaten. Looked for by people  
If whi is finished, they looked for orange  
wood for pig - feed too. 2 types recognized,  
large and small, the small greater rice  
being present. Both bark.

Chinaga - seen as "sama balangak bintarog". Good for  
boat building

m-m? (Keril)

8x;

8899

95

2024 <Ubch became of bark - white and wood m.  
cream yellow. Flanged at base. Hisses when  
cut > 57? Not ubch

2019 - KAMUKAM - Built dig wood - (C.A.)  
Flacourtiaceae?

1825 <UBCH> - AVT lot, Xanthophyllum m.  
White bark. Adipichthys bark,  
wood shade

2018 - Ubch/longus

1828 - Resak nangka - Valica - long for building  
hans, boat. VERY IMPORTANT FOR BOM.

Hopoa bark for bark. Insect borers  
can't enter.

1835 - Resak nangka

1652 - Kempili

1461 - Chiraga

1462 - Kempili

1458 - Gromyng

(M)

(M)

(M)

(M)

(M)

Mentawai - kaya gen hard, less small  
Kapuch. kaya lumpang (soft), saktian hard,  
less long

Omang pantai - pantai  
telur - bash soft

x jakas - spreading roots  
pesisir - like mentawai but hard  
→ bash and for making walls

4  
8  
2

Kempili. habis  
tjandaw

api  
batang - big forest  
kias =

557-2026 - Kempili

KAYU BALUNG - Melapi 2440

Keraji - Butresses used on door.

Ubat dan samak keraji same Batum

Johing flower a bush, ubat dan samak above  
Lep. Mayam flower a branch ends

889-2151

Medang simat. Good for boards. Small  
word - gen. construction

Resak pulut, biasa, bara

Black tree

bat hitam red

Teknyung - MK - [2152]

(2156) Johing - Engeria

843 - 3481 TKU TENGKUL - Fiche bark,

strongy too

3484 - mp Pantai pua - terminal bud color of seedling  
distinctive

3476 - mp - Pantai pua

Butan - 3-4 genera: Eugenia. Hard wood It is edible

Stink bark, flying butterflies. Different from binarak  
bak fragile, not edible, soft wood Mangam  
and gany - dark black, red bark bark take bica  
makan. Joking its inedible, less side

Ubah rana Shine orange bark, flying butterflies and wasps from  
Maya fine wood, long fine. It dry, other skin sample in a good  
construction

3483 TKU TENGKUL

3149 - Sampok - Burseraceae - Fruit edible 889  
1 type only. Kendong fruit different shape  
and name IMPORANT

3146 - Burseraceae - BAHUR (MEL) They  
say this is a marah, used to lock woods in  
a prison to stop water entering. 2 FAMILIES  
BAHUR usually ASTEC Very fibrous

3155 - Pantai dint. Mm

2714 - Mm

Teluk Tenggus - Karama - Teluk Pandai

Tikus - Bukit - Mantang

Pantai - Pawai, Basa, Banjar, (Melap) mostly kandi  
(was)

Nyatch - Gum, sampan - NR <sup>bagi</sup> teng.

sk <sup>ke</sup>  $\left\{ \begin{array}{l} \text{Ls duri - lvs like duri} \\ \text{Ls beras - big trees - most later} \end{array} \right.$  short off by

flat  $\left\{ \begin{array}{l} \text{Ls batu - strongest - kulit tipis - pada} \\ \text{Ls pantai - wide beach, down + get big} \end{array} \right.$  like

<sup>rigs</sup>  
Tuhing = Dillenia - Kijang, kumbang, Used  
for living fence. Pandak, kandi, Kumbang  
pantai.

Mentawai lencir - seeds prominent - no <sup>fruit</sup> - no oil

Ls oso (angin) lvs same, fruit - lvs round

Ls anga down big

Mahabai - 3 types - <sup>are</sup> big bark peels, good for  
fuel <sup>any</sup> are good for boards



MALV.  
STEAR.  
BOMB. } MALVACEAE

$C_{(5)} K_{(5)} A_{(5)} \overline{G}_{(5)}$  FLORAL FORMULA

$C_{(5)} K_{(5)} A_{(5)}$



FLORAL DIAGRAM

$C_{(5)} K_{(5)} A_5 \overline{G}_{(2)}$  Apocynaceae



AA



$\overline{G}_{(3)}$



$C_{(3)} K_9 \overline{G}_{(2)}$  CANNABACEAE

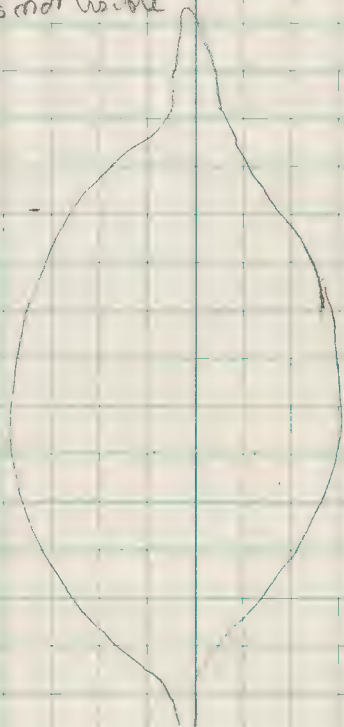
3 xi 1992

8899

~~MICCA~~

(MIX-MO)

1922-? A-102 Tree 15m, 30cm dbh. Straight  
bole Bark dark brown, finely, markedly and shagreened  
fissured inner bark brown, wood yellow. Lvs opp,  
leathery, vms not visible



Archaea? Palmate lvs. lvs. long stalked  
Tree 15m, buttressed 2.5m up, 7.5m  
out. Bark red-brown, flaky. Inner bark  
light brown, wood yellow w/ white lines.

---

Artocarpus <sup>small</sup> Sometimes buttressed w/ large lenticels.  
Careful not to mix w/ Peponia

---

Dioscorea Bole straight, unbuttressed, striated  
gray, lumpy

07

985

3886- ~~Parasacchara~~ Phacelid w/ white latex, red bark  
w/ shells w/ some granules, inner bark orange

985

3623 Kuning

3626 Gunung

3500 Medang

3511 T. J. L. L. L.

5499 Mm

3309 Mm

2605 Bintan

2455 Nyatoh

2307 Mm

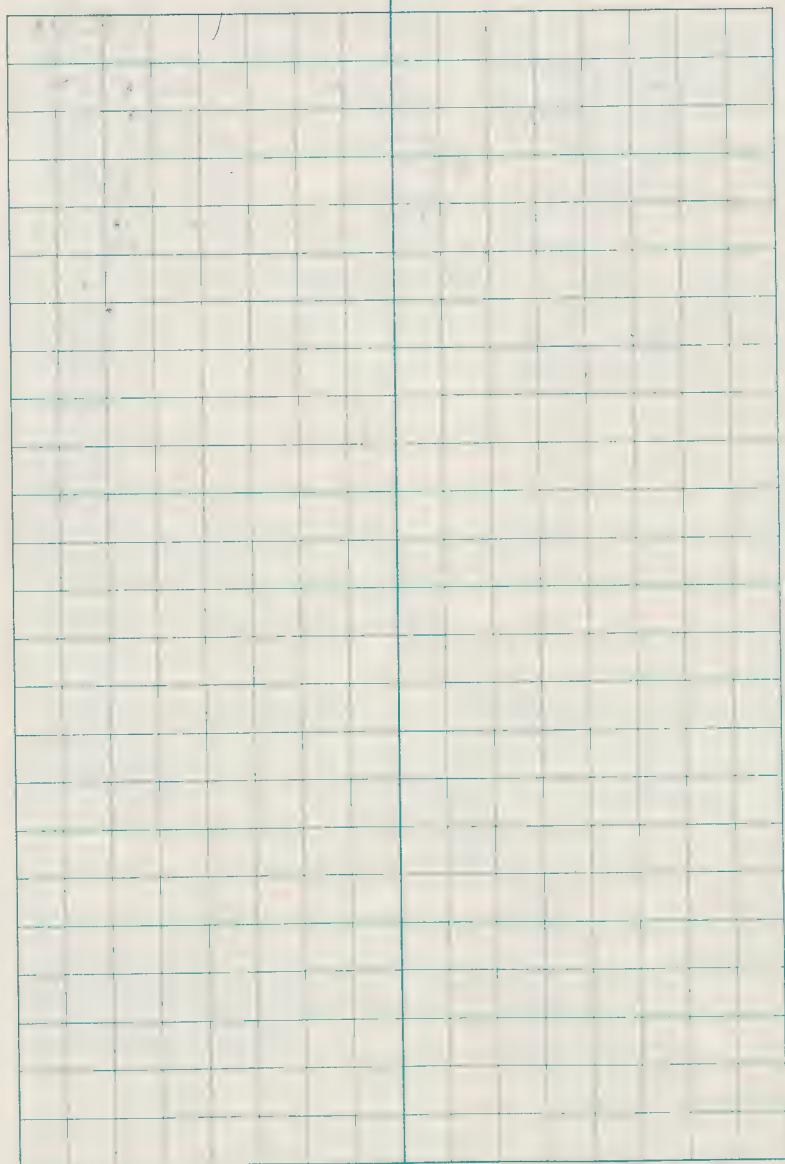
2156 Astocarpus

EVA - 103,000

ISIC - 103,000

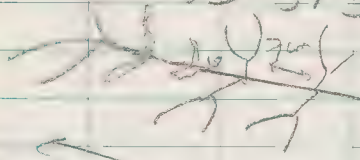
1,100,000

Ashten - 800' on a sloping ridge (slope on both sides)  
on a humus soil is a meranti marsh dominated area  
with a few meranti trees (picture to follow W/det/D.A.)  
Probably from a tree 30m, 100cm dbh buttressed  
1.5m up, 2m at white <sup>latter</sup> ~~clamber~~. Bark not deeply  
fissured, fissured, layered and thin  
petchad. Bark red brown color. 15m to 15' branch  
branches ascending 30°-45°, can not widely  
spreading.



Chloranthus on last internode, young leaves developing below small leaf.

Young getting younger!



3rd leaves getting younger!

Flaccid M serrate margins!

24 flaccid margins

Small tree, stiff roots, white bark, deep sap.  
milk / Bm?

Singapore - small petiole inner bark apt 19 Ash  
red lamina, wood orange w/ yellow secretion  
spike roots

843 Wetar acc by w. <sup>100</sup> <sup>100</sup>

|      |                         |     |      |
|------|-------------------------|-----|------|
| 3841 | <sup>100</sup> tangkary | MK  | 2 st |
| 3494 | Mm                      | MIX | 100  |
| 3476 | Mm                      | MP  | 100  |
| 3978 | Mm                      | MP  | 100  |
| 2145 | TKW                     | MM  | 100  |
| 3146 | BURSERACEAE             | NM  | 843  |
|      |                         |     | 845  |
|      |                         |     | 889  |

889A

|                 |               |               |     |
|-----------------|---------------|---------------|-----|
| 3155            |               |               |     |
| <del>3158</del> | <del>MP</del> | <del>MP</del> |     |
| 3110            | TKW           | MIX           | 979 |
| 3107            | Mm            | MIX           |     |
| 2214            | Mm            | MM            |     |
| 2707            | Burs/Mm       | MIX-MHB       |     |
| 2768            | Mm            | MIX           |     |
| 2709            | Singar        | MK            |     |
| 2752            | Keningd       | MIX           |     |
| 3388            | Ukahi         | MIX           |     |
| 2145            | Mm            | MIX           |     |
| 2156            | Pengar        | MK            |     |
| 2152            | MK            | MK            |     |

980

3897 - Mm

3895 - Mm

3617 - mm

3619 - Rengas - Senecapus

3622 - Nyatoh? Red bark, lots of white sap

3625 - Ubah

3632 - MK

3628 - Diaplysis

3633 - Medang

3637 - Rengas

3497 - Burseraceae

3405 - Mm

3504 MK

3501 - Euclea Sanderiana

3300 - Mm

3507 - Rengas

3301 - Mm

3310 - Gironnia - W. maculata

3313 - Muscivora

3312 - Bintanor

3143 - Bintanor | Clumping on ridge top

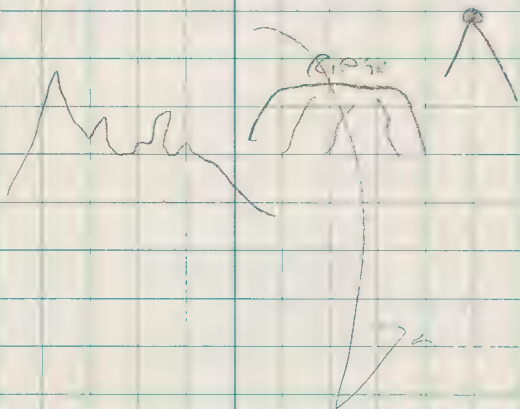
3145 - Bintanor 1

3146 - Rengas

2898 Mm

3127 - Bintanor

Kenia - Wachu river - same as story

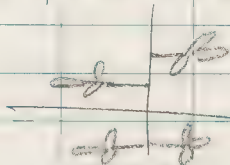


Lahur - red olive

986/35 - 2779 - K. Melam - (Shamlati)

2231

Trifoliate, alt, orange both fluted, white Say



7 cpd lvs, 8-11 lflets, lflets app,  
blond red up, black on touch, both  
brown gray striped both sides lvs, lvs cut.  
20 m tree, 45 cm dbh, 8' bole

Tree, 20 m high narrow and wide spreading buttresses.  
Pink red, lvs alt, cpd, 3 lflets.

Local name

Pandan ~~to~~ Garanie

Boh

Boh

no

no

Geringgany

Mayan

$$\begin{array}{r} 111 \\ 28 \\ \hline 179 \\ 17 \\ \hline 13 \\ \hline 112 \end{array}$$

$$\begin{array}{r} 1,250,000 \\ 200,000 \\ \hline 1,050,000 \end{array}$$

$$\begin{array}{r} 103,000 \\ 100,000 \\ \hline 203,000 \end{array}$$

$$\begin{array}{r} 820 \\ \hline 1.43 \quad ) \quad 1050.000 \\ \underline{1000} \\ +230 \\ \underline{226} \\ 40 \\ 3 \\ \hline 403 \end{array}$$

CAMP. KM. 93:

MR. GATOT, MR. STEPHANUS

MR. SANAWI.

14x - 0.5 day

28739 BGA - Jelutong

28734 BGA - Jelutong

28743 BGA - Dahan Bunting

28745 BGA - Jelutong

K<sub>3</sub>  
9  
5

Locals Kumpong orang = Kuchuman

Perak

Potang 1st d.

14 cu H<sub>2</sub>O, 12 - 20 mm/day

Cutters paid by 790/m<sup>2</sup>

2000 m<sup>2</sup> = good month

15% for cutter

Veris in cut

Neer - Panchra - Uthuk Day

1031/14

1070 Pohanlati

~~20~~

12 transporter - 1 day 2  
will have no school bid for  
fell at. No books brought in.  
Everything is decided by the  
logger.

$$\begin{array}{rcl} 15x \rightarrow \text{Jim} & 7,500 \times 11 = & \underline{\underline{83,500}} \\ \text{Jim} \rightarrow 15x & & 128,000 \\ & & 53,500 \\ & & \underline{\underline{44,500}} \end{array}$$

|       |          |                     |           |                     |                |
|-------|----------|---------------------|-----------|---------------------|----------------|
| MK    | MEKONG   | SAR                 | SINDH     | DRM <sup>1963</sup> | MELAWAN        |
| DRN   | DUGAR    | KPR                 | KARI      | TRM                 | TERAKAWAN      |
| MP    | MERPAT   | MAK                 | MANGKAS   | KPL                 | KAMPIL         |
| SMP   | SIMPOR   | RST <sup>1932</sup> | Rahuta    | MTV                 |                |
| MTW   | MENTAWA  | <del>SAR</del>      |           | Kglm                |                |
| KPG   | KUMPA    | MSW                 | MELAWAN   | MHB                 |                |
| BY    | BAYUR    | KPL                 |           | ASAN                |                |
| MU2   | ?        | ASW                 |           | KPK                 |                |
| MHB   | Mahabai  | RSTN                |           | Rambt               |                |
| KR    | Kening   | Rbt                 | ?         | MJC                 |                |
| CRK   | Chempaka | MP                  |           | IPah <sub>2</sub>   |                |
| KIP   | Kelampai | Kalm                | Kalan     | RSK                 |                |
| BSG   | beruang  | <del>ASW</del>      |           | Kemaman             |                |
| KAJAM | Kalan    | MOG                 |           | MEVIN               |                |
| VB    | Uluw     | ma                  |           | KULIM               |                |
| MIX   | Tu       | BRUNAN              | D BUA     | PULAI               | <u>Asteria</u> |
| FIM   |          | MEWN                | MELAWAN   | BSG                 |                |
| D.BAG | D. BUA   | MP                  |           | PALU                | SINDH (1963)   |
| MY    |          | MUP                 | MELAPI    | KES                 |                |
| AS    | ASAN     | MBG                 |           | KIZ                 |                |
| MO    | MEPANG   | <del>ASW</del>      |           | MERS                |                |
| NY    | NYATTA   | MJL                 | MENJALIN  | MTAN                |                |
| BSG   | BRITATA  | FPK                 |           | PETA                |                |
| PKI   |          | BK / R              | BANGKIRAN | TKU                 |                |
|       |          | MYI                 | MAND      | SAL                 | SAMAK          |

JCT

Subham Rec. place J/1st

SDR

Rec J/2nd

YGN

MLV

BTN

BRN

KALAM

KULIM

CHARN

MARS

BTM

PRX

MDE

YLSN Read Nangha

ASAM = KERAM

Check later the sp. being experimented with

2280 - Check

470  
11.5  
355

128

483

JAINI

764

11.5

649

RECEIVED

19/9 - Lambir

M triloba - seedlings & sterile saplings  
in small gap

M. Winkleri

& M. pinosa(?) in gaps on ridge crest-  
land slip type environs-

Pialut - Abel danuhare. Kelan  
nara dalam. Cough fruit, loss  
- pallie - constipation

Menghuda hutu. Rubenaga  
yellow fever, asine  
make sang for roots, complaints.  
Mela...

~~3 air~~ & 8 people, 11 days

---

Cover full-time - 23 percent

1 patch 100m<sup>2</sup> 8 team

20m strip - 1 cover - carrying - 1d

1 cover - carry

1 patch 15 days 1 cover - making strip - 1 helper

Trees old at landing 6 tree markers  
15% 2nd

Little Lycopodium

Bidang - big room

at 7-15 i market. Blades used as knives,  
base for food. Frith can be eaten  
Most expensive heart of palm.

Tanika = constant

Meaning - keba - V. good wood.  
only not bark than any, good  
for my home. Good for bark  
at least 10 years.

Ochroleus - Deliscacoon (18) m ~~base~~  
Good for row making. Benwang  
team

1 oct - 2000

$$\begin{array}{r} 26 \\ 20 \\ \hline 470 \end{array} \quad \begin{array}{r} 8200 \\ 36 \\ \hline 49200 \\ 24608 \\ \hline 295208 \end{array} \quad \begin{array}{r} 46 \\ 59 \\ \hline 414 \\ 36 \\ 75 \\ \hline 180 \\ 2520 \\ \hline 270,000 \end{array}$$

$$\begin{array}{r} 8 \times 200 \\ \hline 1600 \\ 65600 \\ \hline 16400 \\ \hline 229600 \end{array}$$
 200 Lh  
 65600 Pcl  
 16400  
 229600 Den

$$\begin{array}{r} 414 \\ 40 \\ 15 \\ \hline 469 \end{array}$$
 414  
 40  
 15  
 469

$$\begin{array}{r} 46 \times 9,000 = 414,000 \\ 28 = 205,200 \\ 8 = 40,000 \\ \hline 749,200 \\ 15,000 \\ \hline 764,200 \end{array}$$
 46x9,000=414,000  
 28 = 205,200  
 8 = 40,000  
 749,200  
 15,000  
 764,200

~~755 Chua~~ // 4 QUEEN TARI 26/27

tianglangi - straps

[Rotan luteh - Selabit / panang sheet  
ties)

Kangkangkusa

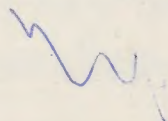
Sitam

Kulat tahun

Pura semut - Mema

Pura Embok - Mema

Bolik



gigante - Medukung

kecerani - purang

pinosa - Mema

triloba - purang emuk

halalia? - Enkerumi

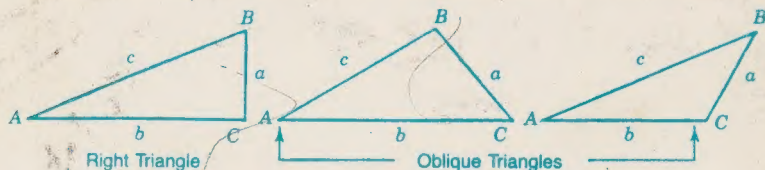
Shorea hypoleuca Selangor bali kelabu  
spread wood / tehampangan  
boulders are hard

Selangor padi not good

Meruk kaba - good wood, red inside

Selangor pua

## TRIGONOMETRIC FORMULÆ



### Solution of Right Triangles

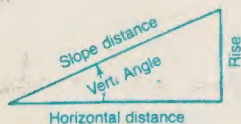
For Angle A.  $\sin = \frac{a}{c}$ ,  $\cos = \frac{b}{c}$ ,  $\tan = \frac{a}{b}$ ,  $\cot = \frac{b}{a}$ ,  $\sec = \frac{c}{b}$ ,  $\operatorname{cosec} = \frac{c}{a}$

|                 |                       |                                                                                          |
|-----------------|-----------------------|------------------------------------------------------------------------------------------|
| Given<br>$a, b$ | Required<br>$A, B, c$ | $\tan A = \frac{a}{b} = \cot B$ , $c = \sqrt{a^2 + b^2} = a \sqrt{1 + \frac{b^2}{a^2}}$  |
| $a, c$          | $A, B, b$             | $\sin A = \frac{a}{c} = \cos B$ , $b = \sqrt{(c+a)(c-a)} = c \sqrt{1 - \frac{a^2}{c^2}}$ |
| $A, a$          | $B, b, c$             | $B = 90^\circ - A$ , $b = a \cot A$ , $c = \frac{a}{\sin A}$                             |
| $A, b$          | $B, a, c$             | $B = 90^\circ - A$ , $a = b \tan A$ , $c = \frac{b}{\cos A}$                             |
| $A, c$          | $B, a, b$             | $B = 90^\circ - A$ , $a = c \sin A$ , $b = c \cos A$                                     |

### Solution of Oblique Triangles

|                    |                       |                                                                                                                                                                            |
|--------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Given<br>$A, B, a$ | Required<br>$b, c, C$ | $b = \frac{a \sin B}{\sin A}$ , $C = 180^\circ - (A + B)$ , $c = \frac{a \sin C}{\sin A}$                                                                                  |
| $A, a, b$          | $B, c, C$             | $\sin B = \frac{b \sin A}{a}$ , $C = 180^\circ - (A + B)$ , $c = \frac{a \sin C}{\sin A}$                                                                                  |
| $a, b, C$          | $A, B, c$             | $A + B = 180^\circ - C$ , $\tan \frac{1}{2}(A - B) = \frac{(a - b) \tan \frac{1}{2}(A + B)}{a + b}$ ,<br>$c = \frac{a \sin C}{\sin A}$                                     |
| $a, b, c$          | $A, B, C$             | $s = \frac{a + b + c}{2}$ , $\sin \frac{1}{2}A = \sqrt{\frac{(s - b)(s - c)}{bc}}$ ,<br>$\sin \frac{1}{2}B = \sqrt{\frac{(s - a)(s - c)}{ac}}$ , $C = 180^\circ - (A + B)$ |
| $a, b, c$          | Area                  | $s = \frac{a + b + c}{2}$ , $\text{area} = \sqrt{s(s - a)(s - b)(s - c)}$                                                                                                  |
| $A, b, c$          | Area                  | $\text{area} = \frac{bc \sin A}{2}$                                                                                                                                        |
| $A, B, C, a$       | Area                  | $\text{area} = \frac{a^2 \sin B \sin C}{2 \sin A}$                                                                                                                         |

### REDUCTION TO HORIZONTAL



Horizontal distance = Slope distance multiplied by the cosine of the vertical angle. Thus: slope distance = 319.4 ft. Vert. angle =  $5^\circ 10'$ . From Table, Page IX,  $\cos 5^\circ 10' = .9959$ . Horizontal distance =  $319.4 \times .9959 = 318.09$  ft.  
Horizontal distance also = Slope distance minus slope distance times  $(1 - \cos \text{vertical angle})$ . With the same figures as in the preceding example, the following result is obtained.  $\cos 5^\circ 10' = .9959$ .  $1 - .9959 = .0041$ .  $319.4 \times .0041 = 1.31$ .  $319.4 - 1.31 = 318.09$  ft.

When the rise is known, the horizontal distance is approximately: — the slope distance less the square of the rise divided by twice the slope distance. Thus: rise = 14 ft., slope distance = 302.6 ft. Horizontal distance =  $302.6 - \frac{14 \times 14}{2 \times 302.6} = 302.6 - 0.32 = 302.28$  ft.

